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SEQUENCE LISTING

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FURUYAMA, Naoki

<120> Novel Proteins and Use Thereof

<130> 3083US0P

<150> PCT/JP03/08690

<151> 2003-07-09

<150> JP 2002-201856

<151> 2002-07-10

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<170> PatentIn version 3.1

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Phe Leu Gly Pro Val Leu Pro Val Arg Ala Pro Val Phe Gly Arg Ser  
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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Thr | Pro | Thr | Leu | Ser | Pro | Glu | Glu | Asn | Glu | Phe | Val | Glu | Glu | Glu |     |
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| Asn | Gln | Pro | Val | Leu | Val | Leu | Ser | Ser | Glu | Glu | Pro | Glu | Pro | Gly | Pro |     |
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| Ala | Thr | Val | Asp | Cys | Pro | Arg | Asp | Cys | Ala | Cys | Ser | Gln | Glu | Gly | Val |     |
|     |     |     |     |     |     | 45  |     |     |     |     | 50  |     |     |     | 55  |     |
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| Val | Asp | Cys | Gly | Gly | Ile | Asp | Leu | Arg | Glu | Phe | Pro | Gly | Asp | Leu | Pro |     |
|     |     |     |     |     | 60  |     |     |     |     | 65  |     |     |     | 70  |     |     |
| gag | cac | acc | aac | cat | ctc | tcc | ttg | cag | aac | aac | cag | ctg | gag | aag | atc |     |
| Glu | His | Thr | Asn | His | Leu | Ser | Leu | Gln | Asn | Asn | Gln | Leu | Glu | Lys | Ile |     |
|     |     |     |     |     | 75  |     |     |     |     | 80  |     |     |     | 85  |     |     |
| tac | ccc | gag | gag | ctg | tcc | cg  | ctg | cag | cg  | ctg | gag | ac  | ctg | aac | ctg |     |
| Tyr | Pro | Glu | Glu | Leu | Ser | Arg | Leu | Gln | Arg | Leu | Glu | Thr | Leu | Asn | Leu |     |
|     |     |     |     |     | 90  |     |     |     |     | 95  |     |     |     | 100 |     | 105 |
| cag | aac | aac | cgc | ctg | aca | tcc | cga | ggg | ctc | cca | gag | gag | gca | ttt | gag |     |
| Gln | Asn | Asn | Arg | Leu | Thr | Ser | Arg | Gly | Leu | Pro | Glu | Ala | Phe | Glu |     |     |
|     |     |     |     |     | 110 |     |     |     |     | 115 |     |     |     | 120 |     |     |
| cat | ctt | act | agc | ctc | aat | tac | ctg | tac | ctg | gcc | aac | aac | aag | ctg | aca |     |
| His | Leu | Thr | Ser | Leu | Asn | Tyr | Leu | Tyr | Leu | Ala | Asn | Asn | Lys | Leu | Thr |     |
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| Leu | Ala | Pro | Arg | Phe | Leu | Pro | Asn | Ala | Leu | Ile | Ser | Val | Asp | Phe | Ala |     |
|     |     |     |     |     | 140 |     |     |     |     | 145 |     |     |     | 150 |     |     |
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| Ala | Asn | Tyr | Leu | Thr | Lys | Ile | Tyr | Gly | Leu | Thr | Phe | Gly | Gln | Lys | Pro |     |
|     |     |     |     |     | 155 |     |     |     |     | 160 |     |     |     | 165 |     |     |
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| Asn | Leu | Arg | Ser | Val | Tyr | Leu | His | Asn | Asn | Lys | Leu | Ala | Asp | Ala | Gly |     |
|     |     |     |     |     | 170 |     |     |     |     | 175 |     |     |     | 180 |     | 185 |
| ctg | ccg | gac | cac | atg | ttc | aat | ggc | tcc | agc | aac | gtc | gag | atc | cta | atc |     |
| Leu | Pro | Asp | His | Met | Phe | Asn | Gly | Ser | Ser | Asn | Val | Glu | Ile | Leu | Ile |     |
|     |     |     |     |     | 190 |     |     |     |     | 195 |     |     |     | 200 |     |     |
| ctg | tcc | agc | aac | ttc | ctg | cgc | cat | gtg | ccc | aag | cac | ctg | cca | ccc | gct |     |
| Leu | Ser | Ser | Asn | Phe | Leu | Arg | His | Val | Pro | Lys | His | Leu | Pro | Pro | Ala |     |
|     |     |     |     |     | 205 |     |     |     |     | 210 |     |     |     | 215 |     |     |
| ctg | tac | aag | ctg | cac | ctc | aag | aac | aat | aag | cta | gag | aag | atc | ccc | cct |     |
| Leu | Tyr | Lys | Leu | His | Leu | Lys | Asn | Asn | Lys | Leu | Glu | Lys | Ile | Pro | Pro |     |
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| Gly | Ala | Phe | Ser | Glu | Leu | Ser | Asn | Leu | Arg | Glu | Leu | Tyr | Leu | Gln | Asn |     |

| 235   | 240 | 245 |      |
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| aac tac ctg acc gac gag ggt ctg gac aac gag acc ttc tgg aag ctg<br>Asn Tyr Leu Thr Asp Glu Gly Leu Asp Asn Glu Thr Phe Trp Lys Leu<br>250 255 260 265 |     |     | 864  |
| tcc agc ctg gag tac ctg gac ttg tcc agc acc aac ctg tcg agg gtc<br>Ser Ser Leu Glu Tyr Leu Asp Leu Ser Ser Thr Asn Leu Ser Arg Val<br>270 275 280     |     |     | 912  |
| cca gcg ggt ctt ccc cgc agc ctg gtc ctg ctg cac ctg gag aaa aat<br>Pro Ala Gly Leu Pro Arg Ser Leu Val Leu Leu His Leu Glu Lys Asn<br>285 290 295     |     |     | 960  |
| gcc atc cag agc gta gaa gct gat gtg ctg aca ccc atc cgc aac ctg<br>Ala Ile Gln Ser Val Glu Ala Asp Val Leu Thr Pro Ile Arg Asn Leu<br>300 305 310     |     |     | 1008 |
| gag tac ctg ctg cta cat agc aac cag ctg cag gcc aag ggt atc cac<br>Glu Tyr Leu Leu His Ser Asn Gln Leu Gln Ala Lys Gly Ile His<br>315 320 325         |     |     | 1056 |
| cca ctg gcc ttc cag ggc ctc aag aag ctc cac aca gtg cat cta tac<br>Pro Leu Ala Phe Gln Gly Leu Lys Lys Leu His Thr Val His Leu Tyr<br>330 335 340 345 |     |     | 1104 |
| aac aac gcg ctg gaa cgt gtg ccc agc ggc ctg ccc cgc cga gtg cgc<br>Asn Asn Ala Leu Glu Arg Val Pro Ser Gly Leu Pro Arg Arg Val Arg<br>350 355 360     |     |     | 1152 |
| acc ctc atg atc ctg cac aac cag att aca ggc ata ggc cgt gag gac<br>Thr Leu Met Ile Leu His Asn Gln Ile Thr Gly Ile Gly Arg Glu Asp<br>365 370 375     |     |     | 1200 |
| ttc gct acc acc tac ttc ctg gaa gag ctc aac ctc agc tac aac cgc<br>Phe Ala Thr Thr Tyr Phe Leu Glu Leu Asn Leu Ser Tyr Asn Arg<br>380 385 390         |     |     | 1248 |
| atc acc agc cca cag atg cac cga gat gcc ttc cgc aag cta cgc ctg<br>Ile Thr Ser Pro Gln Met His Arg Asp Ala Phe Arg Lys Leu Arg Leu<br>395 400 405     |     |     | 1296 |
| ctg cgt tca ctt gac ttg tct ggc aac cgt ctg caa aca ctg cct cca<br>Leu Arg Ser Leu Asp Leu Ser Gly Asn Arg Leu Gln Thr Leu Pro Pro<br>410 415 420 425 |     |     | 1344 |
| ggc ctg ccg aaa aac gta cac gtg ctc aag gtc aag cgg aat gag ctg<br>Gly Leu Pro Lys Asn Val His Val Leu Lys Val Lys Arg Asn Glu Leu<br>430 435 440     |     |     | 1392 |
| gct gcc ctg gca cgt ggg gca cta gct ggc atg gcc cag ctt cg gaa<br>Ala Ala Leu Ala Arg Gly Ala Leu Ala Gly Met Ala Gln Leu Arg Glu<br>445 450 455      |     |     | 1440 |
| ctc tac ctc aca ggc aac cga ctg cga agc cgg gcc ctg gga ccc cgt<br>Leu Tyr Leu Thr Gly Asn Arg Leu Arg Ser Arg Ala Leu Gly Pro Arg<br>460 465 470     |     |     | 1488 |

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|---|------|
| gcc tgg gtg gac ctt gct ggt ctg cag ctg gac atc gct ggg aat<br>Ala Trp Val Asp Leu Ala Gly Leu Gln Leu Leu Asp Ile Ala Gly Asn<br>475                   480                   485                           | 1536 |
| cag ctc aca gag gtc cct gag ggg ctc ccc cca tct ctg gag tat ctg<br>Gln Leu Thr Glu Val Pro Glu Gly Leu Pro Pro Ser Leu Glu Tyr Leu<br>490                   495                   500                   505 | 1584 |
| tac ctg cag aat aac aag att agt gcc gtt cct gcc aac gcc ttt gac<br>Tyr Leu Gln Asn Asn Lys Ile Ser Ala Val Pro Ala Asn Ala Phe Asp<br>510                   515                   520                       | 1632 |
| tcc act ccc aac ctt aag ggg atc ttt ctc agg ttc aac aag ctg gct<br>Ser Thr Pro Asn Leu Lys Gly Ile Phe Leu Arg Phe Asn Lys Leu Ala<br>525                   530                   535                       | 1680 |
| gtg ggc tcc gtg gtg gaa agc gcc ttc cg <sup>g</sup> agg ctg aaa cac ctg cag<br>Val Gly Ser Val Val Glu Ser Ala Phe Arg Arg Leu Lys His Leu Gln<br>540                   545                   550           | 1728 |
| gtc ttg gac att gaa ggc aac ttt gag ttt ggt aat ggt tcc aag gac<br>Val Leu Asp Ile Glu Gly Asn Phe Glu Phe Gly Asn Gly Ser Lys Asp<br>555                   560                   565                       | 1776 |
| aaa gat gag gaa gag gaa gag gag gaa gag gaa gat gag gaa gag<br>Lys Asp Glu Glu Glu Glu Glu Glu Glu Asp Glu Glu Glu<br>570                   575                   580                   585                 | 1824 |
| gaa act aga tag<br>Glu Thr Arg  | 1836 |

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Asp Thr Pro Thr Leu Ser Pro Glu Glu Asn Glu Phe Val Glu Glu Glu  
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Val Asp Cys Gly Gly Ile Asp Leu Arg Glu Phe Pro Gly Asp Leu Pro  
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Glu His Thr Asn His Leu Ser Leu Gln Asn Asn Gln Leu Glu Lys Ile  
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Tyr Pro Glu Glu Leu Ser Arg Leu Gln Arg Leu Glu Thr Leu Asn Leu  
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Gln Asn Asn Arg Leu Thr Ser Arg Gly Leu Pro Glu Glu Ala Phe Glu  
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His Leu Thr Ser Leu Asn Tyr Leu Tyr Leu Ala Asn Asn Lys Leu Thr  
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Leu Ala Pro Arg Phe Leu Pro Asn Ala Leu Ile Ser Val Asp Phe Ala  
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Ala Asn Tyr Leu Thr Lys Ile Tyr Gly Leu Thr Phe Gly Gln Lys Pro  
155 160 165

Asn Leu Arg Ser Val Tyr Leu His Asn Asn Lys Leu Ala Asp Ala Gly  
170 175 180 185

Leu Pro Asp His Met Phe Asn Gly Ser Ser Asn Val Glu Ile Leu Ile  
190 195 200

Leu Ser Ser Asn Phe Leu Arg His Val Pro Lys His Leu Pro Pro Ala  
205 210 215

Leu Tyr Lys Leu His Leu Lys Asn Asn Lys Leu Glu Lys Ile Pro Pro  
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Gly Ala Phe Ser Glu Leu Ser Asn Leu Arg Glu Leu Tyr Leu Gln Asn  
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Ser Ser Leu Glu Tyr Leu Asp Leu Ser Ser Thr Asn Leu Ser Arg Val

270

275

280

Pro Ala Gly Leu Pro Arg Ser Leu Val Leu Leu His Leu Glu Lys Asn  
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Ala Ile Gln Ser Val Glu Ala Asp Val Leu Thr Pro Ile Arg Asn Leu  
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Glu Tyr Leu Leu Leu His Ser Asn Gln Leu Gln Ala Lys Gly Ile His  
315 320 325

Pro Leu Ala Phe Gln Gly Leu Lys Lys Leu His Thr Val His Leu Tyr  
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Asn Asn Ala Leu Glu Arg Val Pro Ser Gly Leu Pro Arg Arg Val Arg  
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Thr Leu Met Ile Leu His Asn Gln Ile Thr Gly Ile Gly Arg Glu Asp  
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Phe Ala Thr Thr Tyr Phe Leu Glu Glu Leu Asn Leu Ser Tyr Asn Arg  
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Ile Thr Ser Pro Gln Met His Arg Asp Ala Phe Arg Lys Leu Arg Leu  
395 400 405

Leu Arg Ser Leu Asp Leu Ser Gly Asn Arg Leu Gln Thr Leu Pro Pro  
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Gly Leu Pro Lys Asn Val His Val Leu Lys Val Lys Arg Asn Glu Leu  
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Ala Ala Leu Ala Arg Gly Ala Leu Ala Gly Met Ala Gln Leu Arg Glu  
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Leu Tyr Leu Thr Gly Asn Arg Leu Arg Ser Arg Ala Leu Gly Pro Arg  
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Ala Trp Val Asp Leu Ala Gly Leu Gln Leu Leu Asp Ile Ala Gly Asn  
475 480 485

Gln Leu Thr Glu Val Pro Glu Gly Leu Pro Pro Ser Leu Glu Tyr Leu  
490 495 500 505

Tyr Leu Gln Asn Asn Lys Ile Ser Ala Val Pro Ala Asn Ala Phe Asp  
510 515 520

Ser Thr Pro Asn Leu Lys Gly Ile Phe Leu Arg Phe Asn Lys Leu Ala  
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Val Gly Ser Val Val Glu Ser Ala Phe Arg Arg Leu Lys His Leu Gln  
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Phe Leu Gly Pro Val Leu Pro Val Arg Ala Pro Val Phe Gly Arg Ser  
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Asp Thr Pro Thr Leu Ser Pro Glu Glu Asn Glu Phe Val Glu Glu

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| gcc act gtc gac tgt ccc cga gat tgt gcc tgt tcc cag gaa ggt gta<br>Ala Thr Val Asp Cys Pro Arg Asp Cys Ala Cys Ser Gln Glu Gly Val<br>45  | 50  | 55  |     | 240 |
| gtg gac tgt ggt ggc att gac ctg cgt gag ttt cca ggc gac ctg ccc<br>Val Asp Cys Gly Gly Ile Asp Leu Arg Glu Phe Pro Gly Asp Leu Pro<br>60  | 65  | 70  |     | 288 |
| gag cac acc aac cat ctc tcc ttg cag aac aac cag ctg gag aag atc<br>Glu His Thr Asn His Leu Ser Leu Gln Asn Asn Gln Leu Glu Lys Ile<br>75  | 80  | 85  |     | 336 |
| tac ccc gag gag ctg tcc cgg ctg cag cgg ctg gag acg ctg aac ctg<br>Tyr Pro Glu Glu Leu Ser Arg Leu Gln Arg Leu Glu Thr Leu Asn Leu<br>90  | 95  | 100 | 105 | 384 |
| cag aac aac cgc ctg aca tcc cga gct gac act ggc acc ccg att cct<br>Gln Asn Asn Arg Leu Thr Ser Arg Ala Asp Thr Gly Thr Pro Ile Pro<br>110 | 115 | 120 |     | 432 |
| gcc aaa cgc cct gat cag tgt gga ctt tgc tgc caa tta tct cac taa<br>Ala Lys Arg Pro Asp Gln Cys Gly Leu Cys Cys Gln Leu Ser His<br>125     | 130 | 135 |     | 480 |
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| Phe Leu Gly Pro Val Leu Pro Val Arg Ala Pro Val Phe Gly Arg Ser<br>-5   | -1  | 1   | 5   |     |
| <br>  |     |     |     |     |
| Asp Thr Pro Thr Leu Ser Pro Glu Glu Asn Glu Phe Val Glu Glu Glu<br>10   | 15  | 20  | 25  |     |
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| Asn Gln Pro Val Leu Val Leu Ser Ser Glu Glu Pro Glu Pro Gly Pro<br>30   | 35  | 40  |     |     |
| <br>  |     |     |     |     |
| Ala Thr Val Asp Cys Pro Arg Asp Cys Ala Cys Ser Gln Glu Gly Val<br>45   | 50  | 55  |     |     |

Val Asp Cys Gly Gly Ile Asp Leu Arg Glu Phe Pro Gly Asp Leu Pro  
60 65 70

Glu His Thr Asn His Leu Ser Leu Gln Asn Asn Gln Leu Glu Lys Ile  
75 80 85

Tyr Pro Glu Glu Leu Ser Arg Leu Gln Arg Leu Glu Thr Leu Asn Leu  
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Gln Asn Asn Arg Leu Thr Ser Arg Ala Asp Thr Gly Thr Pro Ile Pro  
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cgg gtc tcg ggc cac cga gcg ccg tct tca ccc agc gcc atg gct gtg 96  
Arg Val Ser Gly His Arg Ala Pro Ser Ser Pro Ser Ala Met Ala Val  
-40 -35 -30

gcc gct gtc ggc cgc ccg aga gcc ctg cgc tgc ccg ctg ttg ctc ctg 144  
Ala Ala Val Gly Arg Pro Arg Ala Leu Arg Cys Pro Leu Leu Leu  
-25 -20 -15

ctg tca ctc ctg ctg gta gcc ggc cct gcg ctg ggc tgg aac gac cct 192  
Leu Ser Leu Leu Val Ala Gly Pro Ala Leu Gly Trp Asn Asp Pro  
-10 -5 -1 1

|   |     |
|---|-----|
| gac aga ata ctc ttg cg <sup>g</sup> gat gtg aaa gct ctt acc ctc tac tcc gac<br>Asp Arg Ile Leu Leu Arg Asp Val Lys Ala Leu Thr Leu Tyr Ser Asp<br>5 10 15 20  | 240 |
| cgc tac acc acc tcc cg <sup>g</sup> agg ctg gac cct atc cca cag ttg aag tgt<br>Arg Tyr Thr Thr Ser Arg Arg Leu Asp Pro Ile Pro Gln Leu Lys Cys<br>25 30 35    | 288 |
| gtt gga ggc acc gcc ggt tgt gag gcc tat acc ccc agg gtg ata cag<br>Val Gly Gly Thr Ala Gly Cys Glu Ala Tyr Thr Pro Arg Val Ile Gln<br>40 45 50                | 336 |
| tgc cag aac aaa ggc tgg gat ggc tac gat gta cag tgg gaa tgt aag<br>Cys Gln Asn Lys Gly Trp Asp Gly Tyr Asp Val Gln Trp Glu Cys Lys<br>55 60 65                | 384 |
| acc gac ttg gat att gca tac aaa ttt ggc aaa act gtg gtg agc tgt<br>Thr Asp Leu Asp Ile Ala Tyr Lys Phe Gly Lys Thr Val Val Ser Cys<br>70 75 80                | 432 |
| gaa ggc tac gag tcc tct gaa gac cag tat gtc ctc agg ggt tcc tgc<br>Glu Gly Tyr Glu Ser Ser Glu Asp Gln Tyr Val Leu Arg Gly Ser Cys<br>85 90 95 100            | 480 |
| ggc ttg gag tac aac tta gat tac aca gag ctg ggc ctg aag aaa ctg<br>Gly Leu Glu Tyr Asn Leu Asp Tyr Thr Glu Leu Gly Leu Lys Lys Leu<br>105 110 115             | 528 |
| aag gag tct gga aag cac cag ggc ttc tct gat tat tat cac aag ctg<br>Lys Glu Ser Gly Lys His Gln Gly Phe Ser Asp Tyr Tyr His Lys Leu<br>120 125 130             | 576 |
| tgc tcc tca gat tcc tgt ggc ttt att acc att gca gta ctg ttt gtt<br>Cys Ser Ser Asp Ser Cys Gly Phe Ile Thr Ile Ala Val Leu Phe Val<br>135 140 145             | 624 |
| ctc gcc ttt gc <sup>g</sup> gtt tac aag ctg ttc ctc agc gat ggc cag ggg tcg<br>Leu Ala Phe Ala Val Tyr Lys Leu Phe Leu Ser Asp Gly Gln Gly Ser<br>150 155 160 | 672 |
| cct ccg ccg tat tct gag cac ccg cca tac tca gag cac tct cag agg<br>Pro Pro Pro Tyr Ser Glu His Pro Pro Tyr Ser Glu His Ser Gln Arg<br>165 170 175 180         | 720 |
| ttt gcc agt gcc gca ggg gc <sup>g</sup> cct ccg ggc ttt aag tcg gag ttc<br>Phe Ala Ser Ala Ala Gly Ala Pro Pro Gly Phe Lys Ser Glu Phe<br>185 190 195         | 768 |
| aca gga cca cag aat act ggc tat ggt gca agc tct ggc ttc ggg agt<br>Thr Gly Pro Gln Asn Thr Gly Tyr Gly Ala Ser Ser Gly Phe Gly Ser<br>200 205 210             | 816 |
| gct ttt gga ggc caa ggc tat ggc agt tca ggg ccg ggg ttc tgg tct<br>Ala Phe Gly Gly Gln Gly Tyr Gly Ser Ser Gly Pro Gly Phe Trp Ser<br>215 220 225             | 864 |

ggc ctg gga gct gga gga ctg ctt ggg tat ttg ttt ggc agc aac aga 912  
Gly Leu Gly Ala Gly Gly Leu Leu Gly Tyr Leu Phe Gly Ser Asn Arg  
230 235 240

gcg gcg acg cct ttc tca gac tcg tgg tac cat cca gcc tac cct cct 960  
Ala Ala Thr Pro Phe Ser Asp Ser Trp Tyr His Pro Ala Tyr Pro Pro  
245 250 255 260

tcc cac tct ggg gcc tgg aac agt cgg gcc tac tca ccc ctg ggt gga 1008  
Ser His Ser Gly Ala Trp Asn Ser Arg Ala Tyr Ser Pro Leu Gly Gly  
265 270 275

ggc gca ggg agc tat tgt gca tcc tct aat gca gac tcg aga acc aga 1056  
Gly Ala Gly Ser Tyr Cys Ala Ser Ser Asn Ala Asp Ser Arg Thr Arg  
280 285 290

aca gca tca gga tat ggt ggc acc aga aga cgg taa 1092  
Thr Ala Ser Gly Tyr Gly Gly Thr Arg Arg Arg  
295 300

<210> 6  
<211> 363  
<212> PRT  
<213> Mus musculus

<400> 6

Met Val Gly Ser Cys Gly Arg Cys Ala Ala Ala Gly Arg Leu Pro Gln  
-60 -55 -50 -45

Arg Val Ser Gly His Arg Ala Pro Ser Ser Pro Ser Ala Met Ala Val  
-40 -35 -30

Ala Ala Val Gly Arg Pro Arg Ala Leu Arg Cys Pro Leu Leu Leu  
-25 -20 -15

Leu Ser Leu Leu Val Ala Gly Pro Ala Leu Gly Trp Asn Asp Pro  
-10 -5 -1 1

Asp Arg Ile Leu Leu Arg Asp Val Lys Ala Leu Thr Leu Tyr Ser Asp  
5 10 15 20

Arg Tyr Thr Thr Ser Arg Arg Leu Asp Pro Ile Pro Gln Leu Lys Cys  
25 30 35

Val Gly Gly Thr Ala Gly Cys Glu Ala Tyr Thr Pro Arg Val Ile Gln  
40 45 50

Cys Gln Asn Lys Gly Trp Asp Gly Tyr Asp Val Gln Trp Glu Cys Lys

55

60

65

Thr Asp Leu Asp Ile Ala Tyr Lys Phe Gly Lys Thr Val Val Ser Cys  
70 75 80

Glu Gly Tyr Glu Ser Ser Glu Asp Gln Tyr Val Leu Arg Gly Ser Cys  
85 90 95 100

Gly Leu Glu Tyr Asn Leu Asp Tyr Thr Glu Leu Gly Leu Lys Lys Leu  
105 110 115

Lys Glu Ser Gly Lys His Gln Gly Phe Ser Asp Tyr Tyr His Lys Leu  
120 125 130

Cys Ser Ser Asp Ser Cys Gly Phe Ile Thr Ile Ala Val Leu Phe Val  
135 140 145

Leu Ala Phe Ala Val Tyr Lys Leu Phe Leu Ser Asp Gly Gln Gly Ser  
150 155 160

Pro Pro Pro Tyr Ser Glu His Pro Pro Tyr Ser Glu His Ser Gln Arg  
165 170 175 180

Phe Ala Ser Ala Ala Gly Ala Pro Pro Pro Gly Phe Lys Ser Glu Phe  
185 190 195

Thr Gly Pro Gln Asn Thr Gly Tyr Gly Ala Ser Ser Gly Phe Gly Ser  
200 205 210

Ala Phe Gly Gly Gln Gly Tyr Gly Ser Ser Gly Pro Gly Phe Trp Ser  
215 220 225

Gly Leu Gly Ala Gly Gly Leu Leu Gly Tyr Leu Phe Gly Ser Asn Arg  
230 235 240

Ala Ala Thr Pro Phe Ser Asp Ser Trp Tyr His Pro Ala Tyr Pro Pro  
245 250 255 260

Ser His Ser Gly Ala Trp Asn Ser Arg Ala Tyr Ser Pro Leu Gly Gly  
265 270 275

Gly Ala Gly Ser Tyr Cys Ala Ser Ser Asn Ala Asp Ser Arg Thr Arg  
280 285 290

Thr Ala Ser Gly Tyr Gly Gly Thr Arg Arg Arg  
295 300

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Met Ala Val Ala Ala Val Gly Arg Pro Arg Ala Leu Arg Cys Pro Leu  
-30 -25 -20

ttg ctc ctg tca ctc ctg ctg gta gcc ggc cct gcg ctg ggc tgg 96  
Leu Leu Leu Leu Ser Leu Leu Val Ala Gly Pro Ala Leu Gly Trp  
-15 -10 -5 -1 1

aac gac cct gac aga ata ctc ttg cggt gat gtg aaa gct ctt acc ctc 144  
Asn Asp Pro Asp Arg Ile Leu Leu Arg Asp Val Lys Ala Leu Thr Leu  
5 10 15

tac tcc gac cgc tac acc acc tcc cgg agg ctg gac cct atc cca cag 192  
Tyr Ser Asp Arg Tyr Thr Ser Arg Arg Leu Asp Pro Ile Pro Gln  
20 25 30

ttg aag tgt gtt gga ggc acc gcc ggt tgt gag gcc tat acc ccc agg 240  
Leu Lys Cys Val Gly Gly Thr Ala Gly Cys Glu Ala Tyr Thr Pro Arg  
35 40 45

gtg ata cag tgc cag aac aaa ggc tgg gat ggc tac gat gta cag tgg 288  
Val Ile Gln Cys Gln Asn Lys Gly Trp Asp Gly Tyr Asp Val Gln Trp  
50 55 60 65

gaa tgt aag acc gac ttg gat att gca tac aaa ttt ggc aaa act gtg 336  
Glu Cys Lys Thr Asp Leu Asp Ile Ala Tyr Lys Phe Gly Lys Thr Val  
70 75 80

gtg agc tgt gaa ggc tac gag tcc tct gaa gac cag tat gtc ctc agg 384  
Val Ser Cys Glu Gly Tyr Glu Ser Ser Glu Asp Gln Tyr Val Leu Arg

| 85  | 90  | 95  |      |
|---|-----|-----|------|
| ggt tcc tgc ggc ttg gag tac aac tta gat tac aca gag ctg ggc ctg<br>Gly Ser Cys Gly Leu Glu Tyr Asn Leu Asp Tyr Thr Glu Leu Gly Leu<br>100 | 105 | 110 | 432  |
| aag aaa ctg aag gag tct gga aag cac cag ggc ttc tct gat tat tat<br>Lys Lys Leu Lys Glu Ser Gly Lys His Gln Gly Phe Ser Asp Tyr Tyr<br>115 | 120 | 125 | 480  |
| cac aag ctg tgc tcc tca gat tcc tgt ggc ttt att acc att gca gta<br>His Lys Leu Cys Ser Ser Asp Ser Cys Gly Phe Ile Thr Ile Ala Val<br>130 | 135 | 140 | 528  |
| ctg ttt gtt ctc gcc ttt gcg gtt tac aag ctg ttc ctc agc gat ggc<br>Leu Phe Val Leu Ala Phe Ala Val Tyr Lys Leu Phe Leu Ser Asp Gly<br>150 | 155 | 160 | 576  |
| cag ggg tcg cct ccg ccg tat tct gag cac ccg cca tac tca gag cac<br>Gln Gly Ser Pro Pro Tyr Ser Glu His Pro Pro Tyr Ser Glu His<br>165     | 170 | 175 | 624  |
| tct cag agg ttt gcc agt gcc gca ggg gcg cct cct ccg ggc ttt aag<br>Ser Gln Arg Phe Ala Ser Ala Ala Gly Ala Pro Pro Pro Gly Phe Lys<br>180 | 185 | 190 | 672  |
| tcg gag ttc aca gga cca cag aat act ggc tat ggt gca agc tct ggc<br>Ser Glu Phe Thr Gly Pro Gln Asn Thr Gly Tyr Gly Ala Ser Ser Gly<br>195 | 200 | 205 | 720  |
| ttc ggg agt gct ttt gga ggc caa ggc tat ggc agt tca ggg ccg ggg<br>Phe Gly Ser Ala Phe Gly Gly Gln Gly Tyr Gly Ser Ser Gly Pro Gly<br>210 | 215 | 220 | 768  |
| ttc tgg tct ggc ctg gga gct gga gga ctg ctt ggg tat ttg ttt ggc<br>Phe Trp Ser Gly Leu Gly Ala Gly Leu Leu Gly Tyr Leu Phe Gly<br>230     | 235 | 240 | 816  |
| agc aac aga gca gcg acg cct ttc tca gac tcg tgg tac cat cca gcc<br>Ser Asn Arg Ala Ala Thr Pro Phe Ser Asp Ser Trp Tyr His Pro Ala<br>245 | 250 | 255 | 864  |
| tac cct cct tcc cac tct ggg gcc tgg aac agt cgg gcc tac tca ccc<br>Tyr Pro Pro Ser His Ser Gly Ala Trp Asn Ser Arg Ala Tyr Ser Pro<br>260 | 265 | 270 | 912  |
| ctg ggt gga ggc gca ggg agc tat tgt gca tcc tct aat gca gac tcg<br>Leu Gly Gly Ala Gly Ser Tyr Cys Ala Ser Ser Asn Ala Asp Ser<br>275     | 280 | 285 | 960  |
| aga acc aga aca gca tca gga tat ggt ggc acc aga aga cgg taa<br>Arg Thr Arg Thr Ala Ser Gly Tyr Gly Gly Thr Arg Arg Arg<br>290             | 295 | 300 | 1005 |

<210> 8  
<211> 334

<212> PRT  
<213> Mus musculus

<400> 8

Met Ala Val Ala Ala Val Gly Arg Pro Arg Ala Leu Arg Cys Pro Leu  
-30 -25 -20

Leu Leu Leu Ser Leu Leu Leu Val Ala Gly Pro Ala Leu Gly Trp  
-15 -10 -5 -1 1

Asn Asp Pro Asp Arg Ile Leu Leu Arg Asp Val Lys Ala Leu Thr Leu  
5 10 15

Tyr Ser Asp Arg Tyr Thr Ser Arg Arg Leu Asp Pro Ile Pro Gln  
20 25 30

Leu Lys Cys Val Gly Gly Thr Ala Gly Cys Glu Ala Tyr Thr Pro Arg  
35 40 45

Val Ile Gln Cys Gln Asn Lys Gly Trp Asp Gly Tyr Asp Val Gln Trp  
50 55 60 65

Glu Cys Lys Thr Asp Leu Asp Ile Ala Tyr Lys Phe Gly Lys Thr Val  
70 75 80

Val Ser Cys Glu Gly Tyr Glu Ser Ser Glu Asp Gln Tyr Val Leu Arg  
85 90 95

Gly Ser Cys Gly Leu Glu Tyr Asn Leu Asp Tyr Thr Glu Leu Gly Leu  
100 105 110

Lys Lys Leu Lys Glu Ser Gly Lys His Gln Gly Phe Ser Asp Tyr Tyr  
115 120 125

His Lys Leu Cys Ser Ser Asp Ser Cys Gly Phe Ile Thr Ile Ala Val  
130 135 140 145

Leu Phe Val Leu Ala Phe Ala Val Tyr Lys Leu Phe Leu Ser Asp Gly  
150 155 160

Gln Gly Ser Pro Pro Pro Tyr Ser Glu His Pro Pro Tyr Ser Glu His  
165 170 175

Ser Gln Arg Phe Ala Ser Ala Ala Gly Ala Pro Pro Pro Gly Phe Lys  
180 185 190

Ser Glu Phe Thr Gly Pro Gln Asn Thr Gly Tyr Gly Ala Ser Ser Gly  
195 200 205

Phe Gly Ser Ala Phe Gly Gly Gln Gly Tyr Gly Ser Ser Gly Pro Gly  
210 215 220 225

Phe Trp Ser Gly Leu Gly Ala Gly Gly Leu Leu Gly Tyr Leu Phe Gly  
230 235 240

Ser Asn Arg Ala Ala Thr Pro Phe Ser Asp Ser Trp Tyr His Pro Ala  
245 250 255

Tyr Pro Pro Ser His Ser Gly Ala Trp Asn Ser Arg Ala Tyr Ser Pro  
260 265 270

Leu Gly Gly Gly Ala Gly Ser Tyr Cys Ala Ser Ser Asn Ala Asp Ser  
275 280 285

Arg Thr Arg Thr Ala Ser Gly Tyr Gly Gly Thr Arg Arg Arg  
290 295 300

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<211> 1053  
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atg cac ctg ctg ctt gca gcc gcg ttc ggg ctg ctg ctg ctg ctg ccg  
Met His Leu Leu Leu Ala Ala Phe Gly Leu Leu Leu Leu Pro  
-20 -15 -10

48

|   |     |
|---|-----|
| ccg ccc ggg gcc gta gcc tcc cg aag ccg acg atg tgc cag aga tgc<br>Pro Pro Gly Ala Val Ala Ser Arg Lys Pro Thr Met Cys Gln Arg Cys<br>-5 -1 1 5 10 | 96  |
| cg aac ctg gtg gac aag ttc aac cag ggg atg gcc aac acg gcc agg<br>Arg Thr Leu Val Asp Lys Phe Asn Gln Gly Met Ala Asn Thr Ala Arg<br>15 20 25     | 144 |
| aag aat ttc ggt ggc ggc aac acg gcg tgg gaa gag aag acg ctg tct<br>Lys Asn Phe Gly Gly Asn Thr Ala Trp Glu Glu Lys Thr Leu Ser<br>30 35 40        | 192 |
| aag tac gaa ttc agt gag atc cg ctt ctg gag atc atg gag ggt ctg<br>Lys Tyr Glu Phe Ser Glu Ile Arg Leu Leu Glu Ile Met Glu Gly Leu<br>45 50 55     | 240 |
| tgt gac agc agt gac ttt gag tgc aac caa ctc ttg gag cag cag gag<br>Cys Asp Ser Ser Asp Phe Glu Cys Asn Gln Leu Leu Glu Gln Gln Glu<br>60 65 70    | 288 |
| gag cag cta gag gct tgg tgg cag aca ctg aag aag gag cac ccc aac<br>Glu Gln Leu Glu Ala Trp Trp Gln Thr Leu Lys Glu His Pro Asn<br>75 80 85 90     | 336 |
| cta ttt gag tgg ttc tgt gta cac aca ctg aaa ggc tgc tgt ctt cca<br>Leu Phe Glu Trp Phe Cys Val His Thr Leu Lys Ala Cys Cys Leu Pro<br>95 100 105  | 384 |
| ggc acc tac ggg cca gac tgt caa aag tgc cag ggt ggg tcc gag agg<br>Gly Thr Tyr Gly Pro Asp Cys Gln Lys Cys Gln Gly Ser Glu Arg<br>110 115 120     | 432 |
| cct tgc agc gga aac ggc tat tgc agc gga gac ggc agc aga cag ggc<br>Pro Cys Ser Gly Asn Gly Tyr Cys Ser Gly Asp Gly Ser Arg Gln Gly<br>125 130 135 | 480 |
| gac ggg tcc tgc cag tgt cac aca ggc tac aag gga cca ctg tgt att<br>Asp Gly Ser Cys Gln Cys His Thr Gly Tyr Lys Gly Pro Leu Cys Ile<br>140 145 150 | 528 |
| gac tgc aca gac ggc ttc ttc agc ttg cag agg aac gag acc cac agc<br>Asp Cys Thr Asp Gly Phe Ser Leu Gln Arg Asn Glu Thr His Ser<br>155 160 165 170 | 576 |
| atc tgc tca gcc tgt gat gag tct tgc aag acc tgc tct ggt cca agc<br>Ile Cys Ser Ala Cys Asp Glu Ser Cys Lys Thr Cys Ser Gly Pro Ser<br>175 180 185 | 624 |
| aac aaa gac tgt atc cag tgt gaa gtg ggc tgg gca cgt gtg gag gat<br>Asn Lys Asp Cys Ile Gln Cys Glu Val Gly Trp Ala Arg Val Glu Asp<br>190 195 200 | 672 |
| gcc tgt gtg gat gtg gat gag tgt gca gca gag aca tct ccg tgc agc<br>Ala Cys Val Asp Val Asp Glu Cys Ala Ala Glu Thr Ser Pro Cys Ser<br>205 210 215 | 720 |
| gat ggc cag tac tgt gag aat gtc aac ggc tcg tac aca tgt gaa gac   | 768 |

|       |              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|-------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Asp   | Gly          | Gln | Tyr | Cys | Glu | Asn | Val | Asn | Gly | Ser | Tyr | Thr | Cys | Glu | Asp |      |
| 220   |              |     |     |     | 225 |     |     |     |     |     | 230 |     |     |     |     |      |
| tgt   | gat          | tct | acc | tgc | gtg | ggc | tgt | aca | gga | aaa | ggc | cca | gcc | aac | tgt | 816  |
| Cys   | Asp          | Ser | Thr | Cys | Val | Gly | Cys | Thr | Gly | Lys | Gly | Pro | Ala | Asn | Cys |      |
| 235   |              |     |     |     | 240 |     |     |     |     | 245 |     |     |     |     | 250 |      |
| aag   | gag          | tgt | att | gcc | ggc | tac | acc | aag | gag | agt | gga | cag | tgc | aca | gat | 864  |
| Lys   | Glu          | Cys | Ile | Ala | Gly | Tyr | Thr | Lys | Glu | Ser | Gly | Gln | Cys | Thr | Asp |      |
|       |              |     | 255 |     |     |     |     | 260 |     |     |     | 265 |     |     |     |      |
| ata   | gat          | gaa | tgc | tca | cta | gaa | gaa | aaa | gcc | tgt | aag | agg | aaa | aac | gaa | 912  |
| Ile   | Asp          | Glu | Cys | Ser | Leu | Glu | Glu | Lys | Ala | Cys | Lys | Arg | Lys | Asn | Glu |      |
|       |              |     | 270 |     |     |     |     | 275 |     |     | 280 |     |     |     |     |      |
| aac   | tgc          | tac | aat | gtt | ccg | ggg | agc | ttc | gtg | tgc | gtg | tgt | ccg | gaa | ggc | 960  |
| Asn   | Cys          | Tyr | Asn | Val | Pro | Gly | Ser | Phe | Val | Cys | Val | Cys | Pro | Glu | Gly |      |
|       |              |     | 285 |     |     |     | 290 |     |     | 295 |     |     |     |     |     |      |
| ttt   | gag          | gag | aca | gaa | gac | gct | tgt | gtg | cag | aca | gca | gaa | ggc | aaa | gtc | 1008 |
| Phe   | Glu          | Glu | Thr | Glu | Asp | Ala | Cys | Val | Gln | Thr | Ala | Glu | Gly | Lys | Val |      |
|       |              |     | 300 |     |     |     | 305 |     |     | 310 |     |     |     |     |     |      |
| aca   | gag          | gaa | aac | ccc | aca | cag | cca | ccc | tcc | cgt | gag | gat | ttg | tga |     | 1053 |
| Thr   | Glu          | Glu | Asn | Pro | Thr | Gln | Pro | Pro | Ser | Arg | Glu | Asp | Leu |     |     |      |
|       |              |     | 315 |     |     |     | 320 |     |     | 325 |     |     |     |     |     |      |
| <210> | 10           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| <211> | 350          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| <212> | PRT          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| <213> | Mus musculus |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| <400> | 10           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Met   | His          | Leu | Leu | Leu | Ala | Ala | Ala | Phe | Gly | Leu | Leu | Leu | Leu | Leu | Pro |      |
|       |              |     |     |     | -20 |     |     | -15 |     |     |     |     | -10 |     |     |      |
| Pro   | Pro          | Gly | Ala | Val | Ala | Ser | Arg | Lys | Pro | Thr | Met | Cys | Gln | Arg | Cys |      |
|       |              |     |     |     | -5  |     | -1  | 1   |     |     | 5   |     | 10  |     |     |      |
| Arg   | Thr          | Leu | Val | Asp | Lys | Phe | Asn | Gln | Gly | Met | Ala | Asn | Thr | Ala | Arg |      |
|       |              |     |     |     | 15  |     |     | 20  |     |     |     |     | 25  |     |     |      |
| Lys   | Asn          | Phe | Gly | Gly | Asn | Thr | Ala | Trp | Glu | Glu | Lys | Thr | Leu | Ser |     |      |
|       |              |     |     |     | 30  |     |     | 35  |     |     | 40  |     |     |     |     |      |
| Lys   | Tyr          | Glu | Phe | Ser | Glu | Ile | Arg | Leu | Leu | Glu | Ile | Met | Glu | Gly | Leu |      |
|       |              |     |     |     | 45  |     |     | 50  |     |     | 55  |     |     |     |     |      |
| Cys   | Asp          | Ser | Ser | Asp | Phe | Glu | Cys | Asn | Gln | Leu | Leu | Glu | Gln | Gln | Glu |      |
|       |              |     |     |     | 60  |     |     | 65  |     |     | 70  |     |     |     |     |      |

Glu Gln Leu Glu Ala Trp Trp Gln Thr Leu Lys Lys Glu His Pro Asn  
75                   80                   85                   90

Leu Phe Glu Trp Phe Cys Val His Thr Leu Lys Ala Cys Cys Leu Pro  
95                   100                   105

Gly Thr Tyr Gly Pro Asp Cys Gln Lys Cys Gln Gly Gly Ser Glu Arg  
110                   115                   120

Pro Cys Ser Gly Asn Gly Tyr Cys Ser Gly Asp Gly Ser Arg Gln Gly  
125                   130                   135

Asp Gly Ser Cys Gln Cys His Thr Gly Tyr Lys Gly Pro Leu Cys Ile  
140                   145                   150

Asp Cys Thr Asp Gly Phe Phe Ser Leu Gln Arg Asn Glu Thr His Ser  
155                   160                   165                   170

Ile Cys Ser Ala Cys Asp Glu Ser Cys Lys Thr Cys Ser Gly Pro Ser  
175                   180                   185

Asn Lys Asp Cys Ile Gln Cys Glu Val Gly Trp Ala Arg Val Glu Asp  
190                   195                   200

Ala Cys Val Asp Val Asp Glu Cys Ala Ala Glu Thr Ser Pro Cys Ser  
205                   210                   215

Asp Gly Gln Tyr Cys Glu Asn Val Asn Gly Ser Tyr Thr Cys Glu Asp  
220                   225                   230

Cys Asp Ser Thr Cys Val Gly Cys Thr Gly Lys Gly Pro Ala Asn Cys  
235                   240                   245                   250

Lys Glu Cys Ile Ala Gly Tyr Thr Lys Glu Ser Gly Gln Cys Thr Asp  
255                   260                   265

Ile Asp Glu Cys Ser Leu Glu Glu Lys Ala Cys Lys Arg Lys Asn Glu  
270                   275                   280

Asn Cys Tyr Asn Val Pro Gly Ser Phe Val Cys Val Cys Pro Glu Gly  
285                   290                   295

Phe Glu Glu Thr Glu Asp Ala Cys Val Gln Thr Ala Glu Gly Lys Val  
300 305 310

Thr Glu Glu Asn Pro Thr Gln Pro Pro Ser Arg Glu Asp Leu  
315 320 325

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<211> 1254  
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atg ccc ccg cgc cca gga cgc ctc ctc cag ccg ctg gcc ggg ctg ccg 48  
Met Pro Pro Arg Pro Gly Arg Leu Leu Gln Pro Leu Ala Gly Leu Pro  
-30 -25 -20

gcc ctg gcc acg ctc ctg ctg ctc ggg gcg cgc aaa ggc gcc cg 96  
Ala Leu Ala Thr Leu Leu Leu Leu Gly Ala Arg Lys Gly Ala Arg  
-15 -10 -5

gcc cag gag gtg gaa gcg gac agc ggg gtc gag cag gac ccg cac gcc 144  
Ala Gln Glu Val Glu Ala Asp Ser Gly Val Glu Gln Asp Pro His Ala  
-1 1 5 10 15

aag cac ctg tat acg gcc gac atg ttc acg cac ggg atc cag agc gcc 192  
Lys His Leu Tyr Thr Ala Asp Met Phe Thr His Gly Ile Gln Ser Ala  
20 25 30

gcg cac ttc gtc atg ttc ttc gcg ccc tgg tgt gga cac tgc cag cg 240  
Ala His Phe Val Met Phe Phe Ala Pro Trp Cys Gly His Cys Gln Arg  
35 40 45

ctg cag cca act tgg aat gac ctg gga gac aag tac aac agc atg gag 288  
Leu Gln Pro Thr Trp Asn Asp Leu Gly Asp Lys Tyr Asn Ser Met Glu  
50 55 60

gat gcc aag gtc tac gtg gcc aaa gtg gac tgc acg gct gat tcc gac 336  
Asp Ala Lys Val Tyr Val Ala Lys Val Asp Cys Thr Ala Asp Ser Asp  
65 70 75

|   |  |      |
|---|--|------|
| gtg tgc tct gcc cag gga gtg cga gga tac ccc acc ctg aag ttt ttt |  | 384  |
| Val Cys Ser Ala Gln Gly Val Arg Gly Tyr Pro Thr Leu Lys Phe Phe |  |      |
| 80 85 90 95   |  |      |
| aag cct gga caa gaa gca gtg aag tac cag ggt cct aga gac ttt gaa |  | 432  |
| Lys Pro Gly Gln Glu Ala Val Lys Tyr Gln Gly Pro Arg Asp Phe Glu |  |      |
| 100 105 110   |  |      |
| aca ctg gaa aac tgg atg ctg cag aca ctg aac gag gag cca gcc aca |  | 480  |
| Thr Leu Glu Asn Trp Met Leu Gln Thr Leu Asn Glu Glu Pro Ala Thr |  |      |
| 115 120 125   |  |      |
| ccg gag ccg gaa gcg gaa cca ccc aga gcc cct gag ctc aaa cag ggg |  | 528  |
| Pro Glu Pro Glu Ala Glu Pro Pro Arg Ala Pro Glu Leu Lys Gln Gly |  |      |
| 130 135 140   |  |      |
| ttg tat gag ctc tcg gcc aac aac ttt gag ctg cat gtt tct caa ggc |  | 576  |
| Leu Tyr Glu Leu Ser Ala Asn Asn Phe Glu Leu His Val Ser Gln Gly |  |      |
| 145 150 155   |  |      |
| aac cac ttt atc aag ttc ttc gct ccg tgg tgc ggt cac tgc aaa gct |  | 624  |
| Asn His Phe Ile Lys Phe Phe Ala Pro Trp Cys Gly His Cys Lys Ala |  |      |
| 160 165 170 175   |  |      |
| ctg gct cca acc tgg gag cag ctg gct ctg ggc ctt gaa cat tct gaa |  | 672  |
| Leu Ala Pro Thr Trp Glu Gln Leu Ala Leu Gly Leu Glu His Ser Glu |  |      |
| 180 185 190   |  |      |
| acc gtc aag att ggc aag gtt gac tgc acg cag cac tac gct gtc tgc |  | 720  |
| Thr Val Lys Ile Gly Lys Val Asp Cys Thr Gln His Tyr Ala Val Cys |  |      |
| 195 200 205   |  |      |
| tca gag cat cag gtc aga ggc tat cca act ctg ctc tgg ttt cga gat |  | 768  |
| Ser Glu His Gln Val Arg Gly Tyr Pro Thr Leu Leu Trp Phe Arg Asp |  |      |
| 210 215 220   |  |      |
| ggc aag aag gtg gat cag tac aag gga aag cgg gac ttg gag tca ctg |  | 816  |
| Gly Lys Lys Val Asp Gln Tyr Lys Gly Lys Arg Asp Leu Glu Ser Leu |  |      |
| 225 230 235   |  |      |
| aga gac tat gtg cag tcc cag ctg cag ggt tca gag gca gct ccg gag |  | 864  |
| Arg Asp Tyr Val Gln Ser Gln Leu Gln Gly Ser Glu Ala Ala Pro Glu |  |      |
| 240 245 250 255   |  |      |
| act gtt gag ccg tca gag gcc cca gtg atg gct gct gag ccc acg ggt |  | 912  |
| Thr Val Glu Pro Ser Glu Ala Pro Val Met Ala Ala Glu Pro Thr Gly |  |      |
| 260 265 270   |  |      |
| gac aag ggc act gtg ctg gca ctc acc gag aag agc ttc gag gac act |  | 960  |
| Asp Lys Gly Thr Val Leu Ala Leu Thr Glu Lys Ser Phe Glu Asp Thr |  |      |
| 275 280 285   |  |      |
| att gca cag ggg ata acc ttc gtc aag ttc tat gct ccg tgg tgt ggc |  | 1008 |
| Ile Ala Gln Gly Ile Thr Phe Val Lys Phe Tyr Ala Pro Trp Cys Gly |  |      |
| 290 295 300   |  |      |

|   |     |      |     |
|---|-----|------|-----|
| cac tgt aag aat ctg gct cct acc tgg gag gag ctc tct aaa aag gaa |     | 1056 |     |
| His Cys Lys Asn Leu Ala Pro Thr Trp Glu Glu Leu Ser Lys Lys Glu |     |      |     |
| 305   | 310 | 315  |     |
| ttc cca ggc ttg tca gat gtc acc atc gca gaa gtg gac tgc acc gct |     | 1104 |     |
| Phe Pro Gly Leu Ser Asp Val Thr Ile Ala Glu Val Asp Cys Thr Ala |     |      |     |
| 320   | 325 | 330  | 335 |
| gag cgc aat gtc tgc agc aag tac tcg gta cga ggt tat ccc acg ttg |     | 1152 |     |
| Glu Arg Asn Val Cys Ser Lys Tyr Ser Val Arg Gly Tyr Pro Thr Leu |     |      |     |
| 340   | 345 | 350  |     |
| ccg ctt ttc cga gga ggt gaa aaa gtg gga gac cac aac gga ggt aga |     | 1200 |     |
| Pro Leu Phe Arg Gly Gly Glu Lys Val Gly Asp His Asn Gly Gly Arg |     |      |     |
| 355   | 360 | 365  |     |
| gac ctc gac tcc tta cac agc ttt gtt ctg cgc cag gca aag gat gaa |     | 1248 |     |
| Asp Leu Asp Ser Leu His Ser Phe Val Leu Arg Gln Ala Lys Asp Glu |     |      |     |
| 370   | 375 | 380  |     |
| cta tag   |     | 1254 |     |
| Leu   |     |      |     |

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Ala Gln Glu Val Glu Ala Asp Ser Gly Val Glu Gln Asp Pro His Ala  
 -1 1 5 10 15

Lys His Leu Tyr Thr Ala Asp Met Phe Thr His Gly Ile Gln Ser Ala  
 20 25 30

Ala His Phe Val Met Phe Phe Ala Pro Trp Cys Gly His Cys Gln Arg  
 35 40 45

Leu Gln Pro Thr Trp Asn Asp Leu Gly Asp Lys Tyr Asn Ser Met Glu  
 50 55 60

Asp Ala Lys Val Tyr Val Ala Lys Val Asp Cys Thr Ala Asp Ser Asp

65

70

75

Val Cys Ser Ala Gln Gly Val Arg Gly Tyr Pro Thr Leu Lys Phe Phe  
80                   85                   90                   95

Lys Pro Gly Gln Glu Ala Val Lys Tyr Gln Gly Pro Arg Asp Phe Glu  
100               105               110

Thr Leu Glu Asn Trp Met Leu Gln Thr Leu Asn Glu Glu Pro Ala Thr  
115               120               125

Pro Glu Pro Glu Ala Glu Pro Pro Arg Ala Pro Glu Leu Lys Gln Gly  
130               135               140

Leu Tyr Glu Leu Ser Ala Asn Asn Phe Glu Leu His Val Ser Gln Gly  
145               150               155

Asn His Phe Ile Lys Phe Phe Ala Pro Trp Cys Gly His Cys Lys Ala  
160               165               170               175

Leu Ala Pro Thr Trp Glu Gln Leu Ala Leu Gly Leu Glu His Ser Glu  
180               185               190

Thr Val Lys Ile Gly Lys Val Asp Cys Thr Gln His Tyr Ala Val Cys  
195               200               205

Ser Glu His Gln Val Arg Gly Tyr Pro Thr Leu Leu Trp Phe Arg Asp  
210               215               220

Gly Lys Lys Val Asp Gln Tyr Lys Gly Lys Arg Asp Leu Glu Ser Leu  
225               230               235

Arg Asp Tyr Val Gln Ser Gln Leu Gln Gly Ser Glu Ala Ala Pro Glu  
240               245               250               255

Thr Val Glu Pro Ser Glu Ala Pro Val Met Ala Ala Glu Pro Thr Gly  
260               265               270

Asp Lys Gly Thr Val Leu Ala Leu Thr Glu Lys Ser Phe Glu Asp Thr  
275               280               285

Ile Ala Gln Gly Ile Thr Phe Val Lys Phe Tyr Ala Pro Trp Cys Gly  
290               295               300

His Cys Lys Asn Leu Ala Pro Thr Trp Glu Glu Leu Ser Lys Lys Glu  
305 310 315

Phe Pro Gly Leu Ser Asp Val Thr Ile Ala Glu Val Asp Cys Thr Ala  
320 325 330 335

Glu Arg Asn Val Cys Ser Lys Tyr Ser Val Arg Gly Tyr Pro Thr Leu  
340 345 350

Pro Leu Phe Arg Gly Gly Glu Lys Val Gly Asp His Asn Gly Gly Arg  
355 360 365

Asp Leu Asp Ser Leu His Ser Phe Val Leu Arg Gln Ala Lys Asp Glu  
370 375 380

Leu

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gcc ctg gcc acg ctc ctg ctg ctc ggg gcg cgc aaa ggc gcc cg 96  
Ala Leu Ala Thr Leu Leu Leu Leu Gly Ala Arg Lys Gly Ala Arg  
-15 -10 -5

gcc cag gag gtg gaa gcg gac agc ggg gtc gag cag gac ccg cac gcc 144  
Ala Gln Glu Val Glu Ala Asp Ser Gly Val Glu Gln Asp Pro His Ala

| -1  | 1   | 5   | 10  | 15  |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| aag | cac | ctg | tat | acg | gcc | gac | atg | ttc | acg | cac | ggg | atc | cag | agc | gcc | 192 |
| Lys | His | Leu | Tyr | Thr | Ala | Asp | Met | Phe | Thr | His | Gly | Ile | Gln | Ser | Ala |     |
|     |     |     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |
| gcg | cac | ttc | gtc | atg | ttc | tcg | ccc | tgg | tgt | gga | cac | tgc | cag | cg  | 240 |     |
| Ala | His | Phe | Val | Met | Phe | Phe | Ala | Pro | Trp | Cys | Gly | His | Cys | Gln | Arg |     |
|     |     |     |     |     | 35  |     |     |     | 40  |     |     |     |     | 45  |     |     |
| ctg | cag | cca | act | tgg | aat | gac | ctg | gga | gac | aag | tac | aac | agc | atg | gag | 288 |
| Leu | Gln | Pro | Thr | Trp | Asn | Asp | Leu | Gly | Asp | Lys | Tyr | Asn | Ser | Met | Glu |     |
|     |     |     |     |     | 50  |     |     |     | 55  |     |     |     |     | 60  |     |     |
| gat | gcc | aag | gtc | tac | gtg | gcc | aaa | gtg | gac | tgc | acg | gct | gat | tcc | gac | 336 |
| Asp | Ala | Lys | Val | Tyr | Val | Ala | Lys | Val | Asp | Cys | Thr | Ala | Asp | Ser | Asp |     |
|     |     |     |     |     | 65  |     |     |     | 70  |     |     |     |     | 75  |     |     |
| gtg | tgc | tct | gcc | cag | gga | gtg | cga | gga | tac | ccc | acc | ctg | aag | ttt | ttt | 384 |
| Val | Cys | Ser | Ala | Gln | Gly | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Lys | Phe | Phe |     |
|     |     |     |     |     | 80  |     |     |     | 85  |     |     |     |     | 95  |     |     |
| aag | cct | gga | caa | gaa | gca | gtg | aag | tac | cag | ggt | cct | aga | gac | ttt | gaa | 432 |
| Lys | Pro | Gly | Gln | Glu | Ala | Val | Lys | Tyr | Gln | Gly | Pro | Arg | Asp | Phe | Glu |     |
|     |     |     |     |     | 100 |     |     |     | 105 |     |     |     |     | 110 |     |     |
| aca | ctg | gaa | aac | tgg | atg | ctg | cag | aca | ctg | aac | gag | gag | cca | gcc | aca | 480 |
| Thr | Leu | Glu | Asn | Trp | Met | Leu | Gln | Thr | Leu | Asn | Glu | Glu | Pro | Ala | Thr |     |
|     |     |     |     |     | 115 |     |     |     | 120 |     |     |     |     | 125 |     |     |
| ccg | gag | ccg | gaa | gca | ccc | aga | gcc | cct | gag | ctc | aaa | cag | gg  |     | 528 |     |
| Pro | Glu | Pro | Glu | Ala | Glu | Pro | Pro | Arg | Ala | Pro | Glu | Leu | Lys | Gln | Gly |     |
|     |     |     |     |     | 130 |     |     |     | 135 |     |     |     |     | 140 |     |     |
| ttg | tat | gag | ctc | tcg | gcc | aac | aac | ttt | gag | ctg | cat | gtt | tct | caa | gg  | 576 |
| Leu | Tyr | Glu | Leu | Ser | Ala | Asn | Asn | Phe | Glu | Leu | His | Val | Ser | Gln | Gly |     |
|     |     |     |     |     | 145 |     |     |     | 150 |     |     |     |     | 155 |     |     |
| aac | cac | ttt | atc | aag | ttc | ttc | gct | ccg | tgg | tgc | ggt | cac | tgc | aaa | gct | 624 |
| Asn | His | Phe | Ile | Lys | Phe | Phe | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Ala |     |
|     |     |     |     |     | 160 |     |     |     | 165 |     |     |     |     | 170 |     |     |
| ctg | gct | cca | acc | tgg | gag | cag | ctg | gct | ctg | ggc | ctt | gaa | cat | tct | gaa | 672 |
| Leu | Ala | Pro | Thr | Trp | Glu | Gln | Leu | Ala | Leu | Gly | Leu | Glu | His | Ser | Glu |     |
|     |     |     |     |     | 180 |     |     |     | 185 |     |     |     |     | 190 |     |     |
| acc | gtc | aag | att | ggc | aag | gtt | gac | tgc | acg | cag | cac | tac | gct | gtc | tgc | 720 |
| Thr | Val | Lys | Ile | Gly | Lys | Val | Asp | Cys | Thr | Gln | His | Tyr | Ala | Val | Cys |     |
|     |     |     |     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |
| tca | gag | cat | cag | gtc | aga | ggc | tat | cca | act | ctg | ctc | tgg | ttt | cga | gat | 768 |
| Ser | Glu | His | Gln | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Trp | Phe | Arg | Asp |     |
|     |     |     |     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |
| ggc | aag | aag | gtg | gat | cag | tac | aag | gga | aag | cg  | gac | ttg | gag | tca | ctg | 816 |
| Gly | Lys | Lys | Val | Asp | Gln | Tyr | Lys | Gly | Lys | Arg | Asp | Leu | Glu | Ser | Leu |     |
|     |     |     |     |     | 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |

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240 245

843

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Ala Leu Ala Thr Leu Leu Leu Leu Gly Ala Arg Lys Gly Ala Arg  
-15 -10 -5

Ala Gln Glu Val Glu Ala Asp Ser Gly Val Glu Gln Asp Pro His Ala  
-1 1 5 10 15

Lys His Leu Tyr Thr Ala Asp Met Phe Thr His Gly Ile Gln Ser Ala  
20 25 30

Ala His Phe Val Met Phe Phe Ala Pro Trp Cys Gly His Cys Gln Arg  
35 40 45

Leu Gln Pro Thr Trp Asn Asp Leu Gly Asp Lys Tyr Asn Ser Met Glu  
50 55 60

Asp Ala Lys Val Tyr Val Ala Lys Val Asp Cys Thr Ala Asp Ser Asp  
65 70 75

Val Cys Ser Ala Gln Gly Val Arg Gly Tyr Pro Thr Leu Lys Phe Phe  
80 85 90 95

Lys Pro Gly Gln Glu Ala Val Lys Tyr Gln Gly Pro Arg Asp Phe Glu  
100 105 110

Thr Leu Glu Asn Trp Met Leu Gln Thr Leu Asn Glu Glu Pro Ala Thr  
115 120 125

Pro Glu Pro Glu Ala Glu Pro Pro Arg Ala Pro Glu Leu Lys Gln Gly  
130 135 140

Leu Tyr Glu Leu Ser Ala Asn Asn Phe Glu Leu His Val Ser Gln Gly  
145 150 155

Asn His Phe Ile Lys Phe Phe Ala Pro Trp Cys Gly His Cys Lys Ala  
160 165 170 175

Leu Ala Pro Thr Trp Glu Gln Leu Ala Leu Gly Leu Glu His Ser Glu  
180 185 190

Thr Val Lys Ile Gly Lys Val Asp Cys Thr Gln His Tyr Ala Val Cys  
195 200 205

Ser Glu His Gln Val Arg Gly Tyr Pro Thr Leu Leu Trp Phe Arg Asp  
210 215 220

Gly Lys Lys Val Asp Gln Tyr Lys Gly Lys Arg Asp Leu Glu Ser Leu  
225 230 235

Arg Asp Tyr Val Gln Ser Gln Leu  
240 245

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-20 -15 -10

ggc gcg ggg cgc gcg atc ggc tcc gag gac atc gtg gta ggc tgc ggg 96  
Gly Ala Gly Arg Ala Ile Gly Ser Glu Asp Ile Val Val Gly Cys Gly  
-5 -1 1 5 10

|  |     |     |     |     |
|--|-----|-----|-----|-----|
| ggt gtg aag tcg gac gtg gag atc aac tac tcg ctc atc gag ata<br>Gly Phe Val Lys Ser Asp Val Glu Ile Asn Tyr Ser Leu Ile Glu Ile     | 15  | 20  | 25  | 144 |
| aag tta tac acc aag cat ggg act ttg aaa tat cag acg gac tgt gct<br>Lys Leu Tyr Thr Lys His Gly Thr Leu Lys Tyr Gln Thr Asp Cys Ala | 30  | 35  | 40  | 192 |
| cct aac aac ggc tac ttt atg atc ccc ttg tat gat aag ggg gat ttc<br>Pro Asn Asn Gly Tyr Phe Met Ile Pro Leu Tyr Asp Lys Gly Asp Phe | 45  | 50  | 55  | 240 |
| atc ctg aag atc gaa cct cct ctg ggc tgg agt ttt gag cca acc aac<br>Ile Leu Lys Ile Glu Pro Pro Leu Gly Trp Ser Phe Glu Pro Thr Asn | 60  | 65  | 70  | 288 |
| gtg gag ctg cga gtg gat ggt gtg agc gac atc tgc acg aag ggc ggg<br>Val Glu Leu Arg Val Asp Gly Val Ser Asp Ile Cys Thr Lys Gly Gly | 80  | 85  | 90  | 336 |
| gac atc aac ttc ctg ttc acc ggc ttc tct gtg aat ggc aag gtc ctc<br>Asp Ile Asn Phe Leu Phe Thr Gly Phe Ser Val Asn Gly Lys Val Leu | 95  | 100 | 105 | 384 |
| agc aaa ggg cag ccc ctg ggc cca gca gga gtt cag gta tcc ctg aga<br>Ser Lys Gly Gln Pro Leu Gly Pro Ala Gly Val Gln Val Ser Leu Arg | 110 | 115 | 120 | 432 |
| agc acc ggt gct gac tcg aag atc cag tct aca gtc acg cag cct ggc<br>Ser Thr Gly Ala Asp Ser Lys Ile Gln Ser Thr Val Thr Gln Pro Gly | 125 | 130 | 135 | 480 |
| gga aag ttt gcg ttt ttc aaa gtt ctt cct gga gat tat gaa atc ctt<br>Gly Lys Phe Ala Phe Phe Lys Val Leu Pro Gly Asp Tyr Glu Ile Leu | 140 | 145 | 150 | 528 |
| 155  |     |     |     |     |
| gca act cac ccg acc tgg gcg ctg aag gag gca agt acc acg gtg cgt<br>Ala Thr His Pro Thr Trp Ala Leu Lys Glu Ala Ser Thr Thr Val Arg | 160 | 165 | 170 | 576 |
| gtg acg aac tcg aat gct aac gca gct ggt ccc ctc ata gtg gct ggc<br>Val Thr Asn Ser Asn Ala Asn Ala Gly Pro Leu Ile Val Ala Gly     | 175 | 180 | 185 | 624 |
| tat aat gtg tcc ggc tct gtc cgc agt gac ggg gag ccc atg aaa ggg<br>Tyr Asn Val Ser Gly Ser Val Arg Ser Asp Gly Glu Pro Met Lys Gly | 190 | 195 | 200 | 672 |
| gtg aag ttt ctt ctc ttt tct tct tta gtg aac aaa gag gat gtc ctg<br>Val Lys Phe Leu Leu Phe Ser Ser Leu Val Asn Lys Glu Asp Val Leu | 205 | 210 | 215 | 720 |
| ggc tgc aat gtg tcc cca gtg tcc ggg ttc cag ccc cca gat gag agc<br>Gly Cys Asn Val Ser Pro Val Ser Gly Phe Gln Pro Pro Asp Glu Ser | 220 | 225 | 230 | 768 |
| 235  |     |     |     |     |
| ctg att tat ctg tgc tat qcq qtc tcc aaa qaa qac qqc cca ttt tct  |     |     |     | 816 |

|   |     |     |      |
|---|-----|-----|------|
| Leu Val Tyr Leu Cys Tyr Ala Val Ser Lys Glu Asp Gly Pro Phe Ser |     |     |      |
| 240   | 245 | 250 |      |
| ttc tat tcc ttg ccg agt ggg ggc tac act gtg gtg ccc ttc tac cga |     |     | 864  |
| Phe Tyr Ser Leu Pro Ser Gly Gly Tyr Thr Val Val Pro Phe Tyr Arg |     |     |      |
| 255   | 260 | 265 |      |
| gga gaa agg atc acc ttc gac gtg gcg ccc tcc cgg ctt gac ttc acg |     |     | 912  |
| Gly Glu Arg Ile Thr Phe Asp Val Ala Pro Ser Arg Leu Asp Phe Thr |     |     |      |
| 270   | 275 | 280 |      |
| gtg gag cac ggc agc ctg aga atc gag cct gta ttc cac gtc atg ggc |     |     | 960  |
| Val Glu His Gly Ser Leu Arg Ile Glu Pro Val Phe His Val Met Gly |     |     |      |
| 285   | 290 | 295 |      |
| ttc tct gtc acc ggg aga gtc ttg aat gga cct gac gga gaa ggc gtc |     |     | 1008 |
| Phe Ser Val Thr Gly Arg Val Leu Asn Gly Pro Asp Gly Glu Gly Val |     |     |      |
| 300   | 305 | 310 | 315  |
| ccg gag gct gtg gtc acc ctg aac aac cag att aaa gtc aaa acg aag |     |     | 1056 |
| Pro Glu Ala Val Val Thr Leu Asn Asn Gln Ile Lys Val Lys Thr Lys |     |     |      |
| 320   | 325 | 330 |      |
| gcc gac ggc tcc ttc cgc ctg gag aac ata acg aca ggg aca tac acc |     |     | 1104 |
| Ala Asp Gly Ser Phe Arg Leu Glu Asn Ile Thr Thr Gly Thr Tyr Thr |     |     |      |
| 335   | 340 | 345 |      |
| atc cac gct cag aag gag cac ctc tac ttc gag atg gtc acc atc aaa |     |     | 1152 |
| Ile His Ala Gln Lys Glu His Leu Tyr Phe Glu Met Val Thr Ile Lys |     |     |      |
| 350   | 355 | 360 |      |
| att gcc ccc aat acc cca cag ctg gct gac ctc atc gct aca ggg ctt |     |     | 1200 |
| Ile Ala Pro Asn Thr Pro Gln Leu Ala Asp Leu Ile Ala Thr Gly Leu |     |     |      |
| 365   | 370 | 375 |      |
| ctc cct gca ggt tca gca tct gtg gtc aga tcg cca tcg tcc gct ccc |     |     | 1248 |
| Leu Pro Ala Gly Ser Ala Ser Val Val Arg Ser Pro Ser Ser Ala Pro |     |     |      |
| 380   | 385 | 390 | 395  |
| ccg aca cca tca agc aga tga                                     |     |     | 1269 |
| Pro Thr Pro Ser Ser Arg   |     |     |      |
| 400   |     |     |      |

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<213> Mus musculus

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Met Arg Ala Gly Arg Cys Ala Ala Ala Leu Leu Leu Leu Leu Ser  
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Gly Ala Gly Arg Ala Ile Gly Ser Glu Asp Ile Val Val Gly Cys Gly  
-5 -1 1 5 10

Gly Phe Val Lys Ser Asp Val Glu Ile Asn Tyr Ser Leu Ile Glu Ile  
15 20 25

Lys Leu Tyr Thr Lys His Gly Thr Leu Lys Tyr Gln Thr Asp Cys Ala  
30 35 40

Pro Asn Asn Gly Tyr Phe Met Ile Pro Leu Tyr Asp Lys Gly Asp Phe  
45 50 55

Ile Leu Lys Ile Glu Pro Pro Leu Gly Trp Ser Phe Glu Pro Thr Asn  
60 65 70 75

Val Glu Leu Arg Val Asp Gly Val Ser Asp Ile Cys Thr Lys Gly Gly  
80 85 90

Asp Ile Asn Phe Leu Phe Thr Gly Phe Ser Val Asn Gly Lys Val Leu  
95 100 105

Ser Lys Gly Gln Pro Leu Gly Pro Ala Gly Val Gln Val Ser Leu Arg  
110 115 120

Ser Thr Gly Ala Asp Ser Lys Ile Gln Ser Thr Val Thr Gln Pro Gly  
125 130 135

Gly Lys Phe Ala Phe Phe Lys Val Leu Pro Gly Asp Tyr Glu Ile Leu  
140 145 150 155

Ala Thr His Pro Thr Trp Ala Leu Lys Glu Ala Ser Thr Thr Val Arg  
160 165 170

Val Thr Asn Ser Asn Ala Asn Ala Gly Pro Leu Ile Val Ala Gly  
175 180 185

Tyr Asn Val Ser Gly Ser Val Arg Ser Asp Gly Glu Pro Met Lys Gly  
190 195 200

Val Lys Phe Leu Leu Phe Ser Ser Leu Val Asn Lys Glu Asp Val Leu  
205 210 215

Gly Cys Asn Val Ser Pro Val Ser Gly Phe Gln Pro Pro Asp Glu Ser  
220 225 230 235

Leu Val Tyr Leu Cys Tyr Ala Val Ser Lys Glu Asp Gly Pro Phe Ser  
240 245 250

Phe Tyr Ser Leu Pro Ser Gly Gly Tyr Thr Val Val Pro Phe Tyr Arg  
255 260 265

Gly Glu Arg Ile Thr Phe Asp Val Ala Pro Ser Arg Leu Asp Phe Thr  
270 275 280

Val Glu His Gly Ser Leu Arg Ile Glu Pro Val Phe His Val Met Gly  
285 290 295

Phe Ser Val Thr Gly Arg Val Leu Asn Gly Pro Asp Gly Glu Gly Val  
300 305 310 315

Pro Glu Ala Val Val Thr Leu Asn Asn Gln Ile Lys Val Lys Thr Lys  
320 325 330

Ala Asp Gly Ser Phe Arg Leu Glu Asn Ile Thr Thr Gly Thr Tyr Thr  
335 340 345

Ile His Ala Gln Lys Glu His Leu Tyr Phe Glu Met Val Thr Ile Lys  
350 355 360

Ile Ala Pro Asn Thr Pro Gln Leu Ala Asp Leu Ile Ala Thr Gly Leu  
365 370 375

Leu Pro Ala Gly Ser Ala Ser Val Val Arg Ser Pro Ser Ser Ala Pro  
380 385 390 395

Pro Thr Pro Ser Ser Arg  
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-25          -20          -15

ttt gcc atc cat ggc gac ccc aag gcc agc ggg caa gag atg aat ggc      96
Phe Ala Ile His Gly Asp Pro Lys Ala Ser Gly Gln Glu Met Asn Gly
-10          -5           -1   1           5

aag aac tgg gcc aag ctg tgc aag gac tgt aag gtg gcc gac gga aag      144
Lys Asn Trp Ala Lys Leu Cys Lys Asp Cys Lys Val Ala Asp Gly Lys
10            15           20

gcc gta acg ggc acc gac gtc gac atc gtc ttc tcc aaa gtc aag gcg      192
Ala Val Thr Gly Thr Asp Val Asp Ile Val Phe Ser Lys Val Lys Ala
25            30           35

aaa tct gct aga gta atc aac tat gag gag ttc aag aag gcc ctg gaa      240
Lys Ser Ala Arg Val Ile Asn Tyr Glu Glu Phe Lys Lys Ala Leu Glu
40            45           50

gag ctg gca act aag cgg ttc aag ggg aag tcc aag gag gag gcc ttt      288
Glu Leu Ala Thr Lys Arg Phe Lys Gly Ser Lys Glu Glu Ala Phe
55            60           65

gat gcc atc tgc cag ctg ata gcg ggc aag gaa ccg gcc aac att ggc      336
Asp Ala Ile Cys Gln Leu Ile Ala Gly Lys Glu Pro Ala Asn Ile Gly
70            75           80           85

gtc acc aaa gct aaa acg ggt ggt gct gtg gac cgg ctg acg gac acc      384
Val Thr Lys Ala Lys Thr Gly Gly Ala Val Asp Arg Leu Thr Asp Thr
90            95           100

agt aag tat acg ggc tcc cac aaa gaa cgc ttt gat gag agc ggc aag      432
Ser Lys Tyr Thr Gly Ser His Lys Glu Arg Phe Asp Glu Ser Gly Lys
105          110          115

gga aag ggc atc gct gga cgg cag gac atc ctg gac gac agt ggc tac      480
Gly Lys Gly Ile Ala Gly Arg Gln Asp Ile Leu Asp Asp Ser Gly Tyr
120          125          130

gtg agt gcc tac aaa aac gca ggc acc tat gac gcc aag gtg aag aag      528
Val Ser Ala Tyr Lys Asn Ala Gly Thr Tyr Asp Ala Lys Val Lys Lys
135          140          145

tga

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 Phe Ala Ile His Gly Asp Pro Lys Ala Ser Gly Gln Glu Met Asn Gly  
       -10                 -5                 -1    1              5  
  
 Lys Asn Trp Ala Lys Leu Cys Lys Asp Cys Lys Val Ala Asp Gly Lys  
       10                 15                         20  
  
 Ala Val Thr Gly Thr Asp Val Asp Ile Val Phe Ser Lys Val Lys Ala  
       25                 30                         35  
  
 Lys Ser Ala Arg Val Ile Asn Tyr Glu Glu Phe Lys Lys Ala Leu Glu  
       40                 45                         50  
  
 Glu Leu Ala Thr Lys Arg Phe Lys Gly Lys Ser Lys Glu Glu Ala Phe  
       55                 60                         65  
  
 Asp Ala Ile Cys Gln Leu Ile Ala Gly Lys Glu Pro Ala Asn Ile Gly  
       70                 75                         80                 85  
  
 Val Thr Lys Ala Lys Thr Gly Gly Ala Val Asp Arg Leu Thr Asp Thr  
       90                 95                         100  
  
 Ser Lys Tyr Thr Gly Ser His Lys Glu Arg Phe Asp Glu Ser Gly Lys  
       105                110                         115  
  
 Gly Lys Gly Ile Ala Gly Arg Gln Asp Ile Leu Asp Asp Ser Gly Tyr  
       120                125                         130  
  
 Val Ser Ala Tyr Lys Asn Ala Gly Thr Tyr Asp Ala Lys Val Lys Lys  
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Met Ala Ser Gly Trp Phe Tyr Leu Ser Cys Met Val Leu Gly Ser Leu
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gga tcg atg tgc atc ctc ttc act gcc tac tgg atg cag tac tgg cgc      96
Gly Ser Met Cys Ile Leu Phe Thr Ala Tyr Trp Met Gln Tyr Trp Arg
-1   1           5           10            15

ggt ggc ttt gcc tgg gat ggc acg gtg ctc atg ttt aac tgg cac cca      144
Gly Gly Phe Ala Trp Asp Gly Thr Val Leu Met Phe Asn Trp His Pro
20           25           30

gtg ctc atg gtt gcc ggc atg gtg gtg ctc tat gga gct gcc tca ctg      192
Val Leu Met Val Ala Gly Met Val Leu Tyr Gly Ala Ala Ser Leu
35           40           45

gtg tac cgc ctg cct tca tcg tgg gtg ggg ccc agg ctg ccc tgg aaa      240
Val Tyr Arg Leu Pro Ser Ser Trp Val Gly Pro Arg Leu Pro Trp Lys
50           55           60

gtt ctc cat gca gca ctg cac ctg ctg gcc ttc acc tgc act gtg gtg      288
Val Leu His Ala Ala Leu His Leu Leu Ala Phe Thr Cys Thr Val Val
65           70           75

ggg ctg att gcc gtc ttt cgg ttt cac aac cac tcg aga atc gca cac      336
Gly Leu Ile Ala Val Phe Arg Phe His Asn His Ser Arg Ile Ala His
80           85           90           95

ctc tac tcc ctg cac agc tgg ctg ggt atc acc act gta gtc ctc ttc      384
Leu Tyr Ser Leu His Ser Trp Leu Gly Ile Thr Thr Val Val Leu Phe
100          105          110

gcc tgc cag tgg ttc ctg ggc ttt gct gtc ttc ctc ctg ccc tgg gca      432
Ala Cys Gln Trp Phe Leu Gly Phe Ala Val Phe Leu Leu Pro Trp Ala
115          120          125

tcc cag tgg ctg cga agc ctc ctg aaa cct ctg cat gta ttc ttt gga      480
Ser Gln Trp Leu Arg Ser Leu Leu Lys Pro Leu His Val Phe Phe Gly
130          135          140

gcc tgc atc ctt tcc ctg tcc atc aca tct gtt att tcc ggc atc aat      528
Ala Cys Ile Leu Ser Leu Ser Ile Thr Ser Val Ile Ser Gly Ile Asn
145          150          155

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gag aag ctt ttc ttt gtt ttg aaa aat gcc acc aag ccc cta ctc cag 576  
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cct gcc tgg tga 588  
Pro Ala Trp

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Gly Gly Phe Ala Trp Asp Gly Thr Val Leu Met Phe Asn Trp His Pro  
20 25 30

Val Leu Met Val Ala Gly Met Val Val Leu Tyr Gly Ala Ala Ser Leu  
35 40 45

Val Tyr Arg Leu Pro Ser Ser Trp Val Gly Pro Arg Leu Pro Trp Lys  
50 55 60

Val Leu His Ala Ala Leu His Leu Leu Ala Phe Thr Cys Thr Val Val  
65 70 75

Gly Leu Ile Ala Val Phe Arg Phe His Asn His Ser Arg Ile Ala His  
80 85 90 95

Leu Tyr Ser Leu His Ser Trp Leu Gly Ile Thr Thr Val Val Leu Phe  
100 105 110

Ala Cys Gln Trp Phe Leu Gly Phe Ala Val Phe Leu Leu Pro Trp Ala  
115 120 125

Ser Gln Trp Leu Arg Ser Leu Leu Lys Pro Leu His Val Phe Phe Gly  
130 135 140

Ala Cys Ile Leu Ser Leu Ser Ile Thr Ser Val Ile Ser Gly Ile Asn  
145 150 155

Glu Lys Leu Phe Phe Val Leu Lys Asn Ala Thr Lys Pro Leu Leu Gln  
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Met Glu Lys Arg Leu Gly Val Lys Pro Ser Pro Ala Ser Trp Val Leu  
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cca gga tat tgt tgg cag aca tca gtg aag ctg ccg aga agc ctg tac 96  
Pro Gly Tyr Cys Trp Gln Thr Ser Val Lys Leu Pro Arg Ser Leu Tyr  
-30 -25 -20

ctg ctt tac agt ttc ttc tgc agc gtt ctg tgg ttg tca aca gat 144  
Leu Leu Tyr Ser Phe Phe Cys Phe Ser Val Leu Trp Leu Ser Thr Asp  
-15 -10 -5

gct gat gag agc aga tgc caa cag ggg aag aca ctt tat gga gct ggc 192  
Ala Asp Glu Ser Arg Cys Gln Gln Gly Lys Thr Leu Tyr Gly Ala Gly  
-1 1 5 10 15

ttg aga act gag gga gaa aat cac ctc cgg ctt ctt gca gga agc ctg 240  
Leu Arg Thr Glu Gly Glu Asn His Leu Arg Leu Leu Ala Gly Ser Leu  
20 25 30

cct ttc cac gcc tgt cgg gct gcc tgc tgc cgg gac tct gcc tgc cac 288  
Pro Phe His Ala Cys Arg Ala Ala Cys Cys Arg Asp Ser Ala Cys His  
35 40 45

|  |     |     |     |      |
|--|-----|-----|-----|------|
| gct cta tgg tgg ctg gaa ggg atg tgc ttt cag gct gac tgc agc aag<br>Ala Leu Trp Trp Leu Glu Gly Met Cys Phe Gln Ala Asp Cys Ser Lys | 50  | 55  | 60  | 336  |
| ccc cag agc tgc cag cct ttt agg aca gac tct tcc aat tcc atg ctg<br>Pro Gln Ser Cys Gln Pro Phe Arg Thr Asp Ser Ser Asn Ser Met Leu | 65  | 70  | 75  | 384  |
| atc att ttt caa aaa tcc caa act aca gat gat ttg ggc ctt ctg cct<br>Ile Ile Phe Gln Lys Ser Gln Thr Thr Asp Asp Leu Gly Leu Leu Pro | 80  | 85  | 90  | 95   |
| gaa gat gat gaa cca cat ctt ctg agg cta ggc tgg ggc agg aca tcg<br>Glu Asp Asp Glu Pro His Leu Leu Arg Leu Gly Trp Gly Arg Thr Ser | 100 | 105 | 110 | 480  |
| tgg agg agg cag agc ctt ctt ggg gct ccc ctc acc ctt tct gta ccc<br>Trp Arg Arg Gln Ser Leu Leu Gly Ala Pro Leu Thr Leu Ser Val Pro | 115 | 120 | 125 | 528  |
| tct agt cac cac cag agc tta ctc agg gat cgg cag aag aga gat ctc<br>Ser Ser His His Gln Ser Leu Leu Arg Asp Arg Gln Lys Arg Asp Leu | 130 | 135 | 140 | 576  |
| agt gtg gta cct aca cat gga gcg atg cag cat tct aaa gtg aat cac<br>Ser Val Val Pro Thr His Gly Ala Met Gln His Ser Lys Val Asn His | 145 | 150 | 155 | 624  |
| tcc gag gaa gca ggt gct ctg agt ccc acc tct gca gag gtc cgc aaa<br>Ser Glu Glu Ala Gly Ala Leu Ser Pro Thr Ser Ala Glu Val Arg Lys | 160 | 165 | 170 | 175  |
| acc att aca gtt gcc ggt tcc ttc acc agt aac cac act aca cag act<br>Thr Ile Thr Val Ala Gly Ser Phe Thr Ser Asn His Thr Thr Gln Thr | 180 | 185 | 190 | 720  |
| cct gag tgg ccc aag aat gtg tcc atc cat cct gaa cca tcc gag cac<br>Pro Glu Trp Pro Lys Asn Val Ser Ile His Pro Glu Pro Ser Glu His | 195 | 200 | 205 | 768  |
| tcc agt cct gta tct ggt act ccg caa gta aaa agc act gag cac agt<br>Ser Ser Pro Val Ser Gly Thr Pro Gln Val Lys Ser Thr Glu His Ser | 210 | 215 | 220 | 816  |
| cca act gat gcc cct ctg cca gtg gcc ccc tcc tac agc tat gcc acc<br>Pro Thr Asp Ala Pro Leu Pro Val Ala Pro Ser Tyr Ser Tyr Ala Thr | 225 | 230 | 235 | 864  |
| ccc acg ccc cag gcc tct tct cag agc acc tca gca cca cac cca gtt<br>Pro Thr Pro Gln Ala Ser Ser Gln Ser Thr Ser Ala Pro His Pro Val | 240 | 245 | 250 | 255  |
| gta aag gag ctg gtg gtg tct gct ggg aag agc gtc cag atc acc ctg<br>Val Lys Glu Leu Val Val Ser Ala Gly Lys Ser Val Gln Ile Thr Leu | 260 | 265 | 270 | 960  |
| cct aag aat gaa gtt cag tta aat gcc ttc gtc ctt cca gaa gca gag  |     |     |     | 1008 |

|   |     |     |      |
|---|-----|-----|------|
| Pro Lys Asn Glu Val Gln Leu Asn Ala Phe Val Leu Pro Glu Ala Glu |     |     |      |
| 275   | 280 | 285 |      |
| cca gga gaa acc tac acc tac gac tgg cag ctg atc act cat cct aca |     |     | 1056 |
| Pro Gly Glu Thr Tyr Thr Tyr Asp Trp Gln Leu Ile Thr His Pro Thr |     |     |      |
| 290   | 295 | 300 |      |
| gac tac agt gga gag gtg gag agg aaa cat tcc cag agc ctc caa ctg |     |     | 1104 |
| Asp Tyr Ser Gly Glu Val Glu Arg Lys His Ser Gln Ser Leu Gln Leu |     |     |      |
| 305   | 310 | 315 |      |
| tcc aag ctg act cca ggc ctg tac gaa ttc aag gtg act gtg gat ggc |     |     | 1152 |
| Ser Lys Leu Thr Pro Gly Leu Tyr Glu Phe Lys Val Thr Val Asp Gly |     |     |      |
| 320   | 325 | 330 | 335  |
| cag aat gcc cat ggg gaa ggc tac gtg aat gtg aca gtg aaa cca gag |     |     | 1200 |
| Gln Asn Ala His Gly Glu Gly Tyr Val Asn Val Thr Val Lys Pro Glu |     |     |      |
| 340   | 345 | 350 |      |
| ccc cgt aag aac cgg cct ccc gtt gct gtg gtg tca cct cag ttc cag |     |     | 1248 |
| Pro Arg Lys Asn Arg Pro Pro Val Ala Val Val Ser Pro Gln Phe Gln |     |     |      |
| 355   | 360 | 365 |      |
| gag atc tcg ctg cca acc act tct acc atc att gat ggc agc cag agc |     |     | 1296 |
| Glu Ile Ser Leu Pro Thr Thr Ser Thr Ile Ile Asp Gly Ser Gln Ser |     |     |      |
| 370   | 375 | 380 |      |
| acg gat gac gat aaa att gtc cag tac cac tgg gaa gag ctt aag ggg |     |     | 1344 |
| Thr Asp Asp Asp Lys Ile Val Gln Tyr His Trp Glu Glu Leu Lys Gly |     |     |      |
| 385   | 390 | 395 |      |
| ccc ctg aga gaa gag aag atc tct gaa gac aca gcc ata cta aaa ctt |     |     | 1392 |
| Pro Leu Arg Glu Glu Lys Ile Ser Glu Asp Thr Ala Ile Leu Lys Leu |     |     |      |
| 400   | 405 | 410 | 415  |
| agt aag ctc gtc ccg ggg aac tac acc ttc agc tta act gtt gtc gac |     |     | 1440 |
| Ser Lys Leu Val Pro Gly Asn Tyr Thr Phe Ser Leu Thr Val Val Asp |     |     |      |
| 420   | 425 | 430 |      |
| tct gac ggg gct acc aac tcc acc act gca agc ctg act gtg aac aaa |     |     | 1488 |
| Ser Asp Gly Ala Thr Asn Ser Thr Thr Ala Ser Leu Thr Val Asn Lys |     |     |      |
| 435   | 440 | 445 |      |
| gct gtg gac tac cct ccc gtg gcc aat gca ggc ccc aac caa gtg atc |     |     | 1536 |
| Ala Val Asp Tyr Pro Pro Val Ala Asn Ala Gly Pro Asn Gln Val Ile |     |     |      |
| 450   | 455 | 460 |      |
| acc ctg cct cag aac tcc atc acc ctc ttt gga aac cag agc acg gat |     |     | 1584 |
| Thr Leu Pro Gln Asn Ser Ile Thr Leu Phe Gly Asn Gln Ser Thr Asp |     |     |      |
| 465   | 470 | 475 |      |
| gac cac ggc atc acc agc tat gag tgg tcg ctc agc ccg agc agc aaa |     |     | 1632 |
| Asp His Gly Ile Thr Ser Tyr Glu Trp Ser Leu Ser Pro Ser Ser Lys |     |     |      |
| 480   | 485 | 490 | 495  |
| ggg aag gtg gtg gag atg cag gga gtt aga acg cca gcc ctg cag ctg |     |     | 1680 |
| Gly Lys Val Val Glu Met Gln Gly Val Arg Thr Pro Ala Leu Gln Leu |     |     |      |

| 500   | 505 | 510 |      |
|---|-----|-----|------|
| tcc gca atg caa gaa gga gac tat acc tac cag ctc aca gtg act gac<br>Ser Ala Met Gln Glu Gly Asp Tyr Thr Tyr Gln Leu Thr Val Thr Asp<br>515 | 520 | 525 | 1728 |
| acc gca gga caa cag gcc acc gcc caa gtg act gtg att gtg cag cct<br>Thr Ala Gly Gln Gln Ala Thr Ala Gln Val Thr Val Ile Val Gln Pro<br>530 | 535 | 540 | 1776 |
| gag aac aac aag cct cct cag gca gat gca ggc cca gac aaa gag ctg<br>Glu Asn Asn Lys Pro Pro Gln Ala Asp Ala Gly Pro Asp Lys Glu Leu<br>545 | 550 | 555 | 1824 |
| acc ctg ccc gtg gac agc aca acc ctg gac ggc agc aag agc aca gat<br>Thr Leu Pro Val Asp Ser Thr Thr Leu Asp Gly Ser Lys Ser Thr Asp<br>560 | 565 | 570 | 1872 |
| gac cag aga gtc gtc tct tac ctt tgg gag cag agt cgg gga cct gac<br>Asp Gln Arg Val Val Ser Tyr Leu Trp Glu Gln Ser Arg Gly Pro Asp<br>580 | 585 | 590 | 1920 |
| ggg gtg cag ctg gag aat gcc aac agc agt gtc gcc act gtg act ggg<br>Gly Val Gln Leu Glu Asn Ala Asn Ser Ser Val Ala Thr Val Thr Gly<br>595 | 600 | 605 | 1968 |
| ctg caa gtc ggg act tat gta ttc acc ttg act gtc aaa gat gag agg<br>Leu Gln Val Gly Thr Tyr Val Phe Thr Leu Thr Val Lys Asp Glu Arg<br>610 | 615 | 620 | 2016 |
| aac cta cag agc cag agc tcc gtt aat gtc att gtc aaa gaa gaa ata<br>Asn Leu Gln Ser Gln Ser Ser Val Asn Val Ile Val Lys Glu Glu Ile<br>625 | 630 | 635 | 2064 |
| aac aaa ccg cca gta gcc aag atc gct ggg aac gtg gtg gtg acc ttg<br>Asn Lys Pro Pro Val Ala Lys Ile Ala Gly Asn Val Val Val Thr Leu<br>640 | 645 | 650 | 2112 |
| ccc acg agc aca gct gag ctg gat ggc tcg agg tcc tca gat gac aag<br>Pro Thr Ser Thr Ala Glu Leu Asp Gly Ser Arg Ser Ser Asp Asp Lys<br>660 | 665 | 670 | 2160 |
| ggg ata gtc agc tac ctg tgg act cga gat gag acg agc cca gcc gca<br>Gly Ile Val Ser Tyr Leu Trp Thr Arg Asp Glu Thr Ser Pro Ala Ala<br>675 | 680 | 685 | 2208 |
| ggg gag gtg ctg aat cac tct gac cac cac cct gtc ctc ttc ctc tcc<br>Gly Glu Val Leu Asn His Ser Asp His His Pro Val Leu Phe Leu Ser<br>690 | 695 | 700 | 2256 |
| aac ctg gtg gag ggg acc tac acg ttt cac ctg aaa gtg aca gat gca<br>Asn Leu Val Glu Gly Thr Tyr Thr Phe His Leu Lys Val Thr Asp Ala<br>705 | 710 | 715 | 2304 |
| aag ggc gag agc gac aca gac cgg acg aca gtg gaa gtg aag cct gac<br>Lys Gly Glu Ser Asp Thr Asp Arg Thr Thr Val Glu Val Lys Pro Asp<br>720 | 725 | 730 | 2352 |
|   |     | 735 |      |

|   |      |
|---|------|
| ccc agg aaa agc aac cta gtg gag atc atc ttg gat gtg aac gtc agt<br>Pro Arg Lys Ser Asn Leu Val Glu Ile Ile Leu Asp Val Asn Val Ser<br>740 745 750     | 2400 |
| cag ctg act gag agg ctg aag ggg atg ctc atc cgc cag att ggg gtc<br>Gln Leu Thr Glu Arg Leu Lys Gly Met Leu Ile Arg Gln Ile Gly Val<br>755 760 765     | 2448 |
| ctc ctg ggg gtg ctg gat tcc gac atc att gtg caa aag att cag ccg<br>Leu Leu Gly Val Leu Asp Ser Asp Ile Ile Val Gln Lys Ile Gln Pro<br>770 775 780     | 2496 |
| tac acg gag cag agc acc aag atg ttg ttt ttt gtt cag aac gac cct<br>Tyr Thr Glu Gln Ser Thr Lys Met Leu Phe Phe Val Gln Asn Asp Pro<br>785 790 795     | 2544 |
| ccc cac cag ctc ttc aaa ggc cat gag gtg gca gcc atg ctc aag agc<br>Pro His Gln Leu Phe Lys Gly His Glu Val Ala Ala Met Leu Lys Ser<br>800 805 810 815 | 2592 |
| gag ctg cag aag cag aag gct gac ttc ctc atc ttc aga gcc ctg gaa<br>Glu Leu Gln Lys Gln Lys Ala Asp Phe Leu Ile Phe Arg Ala Leu Glu<br>820 825 830     | 2640 |
| atc agc aca gtc aca tgt cag ctg aac tgt tct gac cat ggc cac tgt<br>Ile Ser Thr Val Thr Cys Gln Leu Asn Cys Ser Asp His Gly His Cys<br>835 840 845     | 2688 |
| gac tca ttc acc aag cgc tgt gtc tgt gac ccg ttt tgg atg gag aat<br>Asp Ser Phe Thr Lys Arg Cys Val Cys Asp Pro Phe Trp Met Glu Asn<br>850 855 860     | 2736 |
| ttc atc aag gtg cag ctg agg gat gga gac agc aac tgt gaa tgg agc<br>Phe Ile Lys Val Gln Leu Arg Asp Gly Asp Ser Asn Cys Glu Trp Ser<br>865 870 875     | 2784 |
| gtg ctc tac gtc atc att gcc tcc ttt gtc att gtt gtt gcc ttg ggg<br>Val Leu Tyr Val Ile Ile Ala Ser Phe Val Ile Val Val Ala Leu Gly<br>880 885 890 895 | 2832 |
| atc ctg tca tgg act aca atc tgc tgc aag agg caa aaa gga aaa<br>Ile Leu Ser Trp Thr Thr Ile Cys Cys Lys Arg Gln Lys Gly Lys<br>900 905 910             | 2880 |
| ccc aag agg aaa agc aga tac aag atc ctg gat gcc aca gat cag gag<br>Pro Lys Arg Lys Ser Arg Tyr Lys Ile Leu Asp Ala Thr Asp Gln Glu<br>915 920 925     | 2928 |
| agc ctg gag ctg aaa cca acc tcc cga gca ggc agc aaa cag aaa ggc<br>Ser Leu Glu Leu Lys Pro Thr Ser Arg Ala Gly Ser Lys Gln Lys Gly<br>930 935 940     | 2976 |
| ccc acg ctg agc agc agc ctg atg cat tct gaa tcg gag ctg gac agc<br>Pro Thr Leu Ser Ser Ser Leu Met His Ser Glu Ser Glu Leu Asp Ser<br>945 950 955     | 3024 |

|   |      |
|---|------|
| gac gat gcc atc ttc aca tgg cca gac cg <sup>g</sup> gag aag ggc aaa cta ctg<br>Asp Asp Ala Ile Phe Thr Trp Pro Asp Arg Glu Lys Gly Lys Leu Leu<br>960 965 970 975 | 3072 |
| tat ggt cag aat ggc tct gtg cca aac ggg caa aca cct ttg aag tcc<br>Tyr Gly Gln Asn Gly Ser Val Pro Asn Gly Gln Thr Pro Leu Lys Ser<br>980 985 990                 | 3120 |
| agg agc gca cg <sup>g</sup> gag gag atc ttg tag<br>Arg Ser Ala Arg Glu Glu Ile Leu<br>995   | 3147 |
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| <400> 22  |      |
| Met Glu Lys Arg Leu Gly Val Lys Pro Ser Pro Ala Ser Trp Val Leu<br>-45 -40 -35  |      |
| <br>  |      |
| Pro Gly Tyr Cys Trp Gln Thr Ser Val Lys Leu Pro Arg Ser Leu Tyr<br>-30 -25 -20  |      |
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| Leu Leu Tyr Ser Phe Phe Cys Phe Ser Val Leu Trp Leu Ser Thr Asp<br>-15 -10 -5   |      |
| <br>  |      |
| Ala Asp Glu Ser Arg Cys Gln Gln Gly Lys Thr Leu Tyr Gly Ala Gly<br>-1 1 5 10 15   |      |
| <br>  |      |
| Leu Arg Thr Glu Gly Glu Asn His Leu Arg Leu Leu Ala Gly Ser Leu<br>20 25 30   |      |
| <br>  |      |
| Pro Phe His Ala Cys Arg Ala Ala Cys Cys Arg Asp Ser Ala Cys His<br>35 40 45   |      |
| <br>  |      |
| Ala Leu Trp Trp Leu Glu Gly Met Cys Phe Gln Ala Asp Cys Ser Lys<br>50 55 60   |      |
| <br>  |      |
| Pro Gln Ser Cys Gln Pro Phe Arg Thr Asp Ser Ser Asn Ser Met Leu<br>65 70 75   |      |
| <br>  |      |
| Ile Ile Phe Gln Lys Ser Gln Thr Thr Asp Asp Leu Gly Leu Leu Pro<br>80 85 90 95  |      |
| <br>  |      |
| Glu Asp Asp Glu Pro His Leu Leu Arg Leu Gly Trp Gly Arg Thr Ser   |      |

100                    105                    110

Trp Arg Arg Gln Ser Leu Leu Gly Ala Pro Leu Thr Leu Ser Val Pro  
115                    120                    125

Ser Ser His His Gln Ser Leu Leu Arg Asp Arg Gln Lys Arg Asp Leu  
130                    135                    140

Ser Val Val Pro Thr His Gly Ala Met Gln His Ser Lys Val Asn His  
145                    150                    155

Ser Glu Glu Ala Gly Ala Leu Ser Pro Thr Ser Ala Glu Val Arg Lys  
160                    165                    170                    175

Thr Ile Thr Val Ala Gly Ser Phe Thr Ser Asn His Thr Thr Gln Thr  
180                    185                    190

Pro Glu Trp Pro Lys Asn Val Ser Ile His Pro Glu Pro Ser Glu His  
195                    200                    205

Ser Ser Pro Val Ser Gly Thr Pro Gln Val Lys Ser Thr Glu His Ser  
210                    215                    220

Pro Thr Asp Ala Pro Leu Pro Val Ala Pro Ser Tyr Ser Tyr Ala Thr  
225                    230                    235

Pro Thr Pro Gln Ala Ser Ser Gln Ser Thr Ser Ala Pro His Pro Val  
240                    245                    250                    255

Val Lys Glu Leu Val Val Ser Ala Gly Lys Ser Val Gln Ile Thr Leu  
260                    265                    270

Pro Lys Asn Glu Val Gln Leu Asn Ala Phe Val Leu Pro Glu Ala Glu  
275                    280                    285

Pro Gly Glu Thr Tyr Thr Tyr Asp Trp Gln Leu Ile Thr His Pro Thr  
290                    295                    300

Asp Tyr Ser Gly Glu Val Glu Arg Lys His Ser Gln Ser Leu Gln Leu  
305                    310                    315

Ser Lys Leu Thr Pro Gly Leu Tyr Glu Phe Lys Val Thr Val Asp Gly  
320                    325                    330                    335

Gln Asn Ala His Gly Glu Gly Tyr Val Asn Val Thr Val Lys Pro Glu  
340 345 350

Pro Arg Lys Asn Arg Pro Pro Val Ala Val Val Ser Pro Gln Phe Gln  
355 360 365

Glu Ile Ser Leu Pro Thr Thr Ser Thr Ile Ile Asp Gly Ser Gln Ser  
370 375 380

Thr Asp Asp Asp Lys Ile Val Gln Tyr His Trp Glu Glu Leu Lys Gly  
385 390 395

Pro Leu Arg Glu Glu Lys Ile Ser Glu Asp Thr Ala Ile Leu Lys Leu  
400 405 410 415

Ser Lys Leu Val Pro Gly Asn Tyr Thr Phe Ser Leu Thr Val Val Asp  
420 425 430

Ser Asp Gly Ala Thr Asn Ser Thr Thr Ala Ser Leu Thr Val Asn Lys  
435 440 445

Ala Val Asp Tyr Pro Pro Val Ala Asn Ala Gly Pro Asn Gln Val Ile  
450 455 460

Thr Leu Pro Gln Asn Ser Ile Thr Leu Phe Gly Asn Gln Ser Thr Asp  
465 470 475

Asp His Gly Ile Thr Ser Tyr Glu Trp Ser Leu Ser Pro Ser Ser Lys  
480 485 490 495

Gly Lys Val Val Glu Met Gln Gly Val Arg Thr Pro Ala Leu Gln Leu  
500 505 510

Ser Ala Met Gln Glu Gly Asp Tyr Thr Tyr Gln Leu Thr Val Thr Asp  
515 520 525

Thr Ala Gly Gln Gln Ala Thr Ala Gln Val Thr Val Ile Val Gln Pro  
530 535 540

Glu Asn Asn Lys Pro Pro Gln Ala Asp Ala Gly Pro Asp Lys Glu Leu  
545 550 555

Thr Leu Pro Val Asp Ser Thr Thr Leu Asp Gly Ser Lys Ser Thr Asp  
560 565 570 575

Asp Gln Arg Val Val Ser Tyr Leu Trp Glu Gln Ser Arg Gly Pro Asp  
580 585 590

Gly Val Gln Leu Glu Asn Ala Asn Ser Ser Val Ala Thr Val Thr Gly  
595 600 605

Leu Gln Val Gly Thr Tyr Val Phe Thr Leu Thr Val Lys Asp Glu Arg  
610 615 620

Asn Leu Gln Ser Gln Ser Ser Val Asn Val Ile Val Lys Glu Glu Ile  
625 630 635

Asn Lys Pro Pro Val Ala Lys Ile Ala Gly Asn Val Val Val Thr Leu  
640 645 650 655

Pro Thr Ser Thr Ala Glu Leu Asp Gly Ser Arg Ser Ser Asp Asp Lys  
660 665 670

Gly Ile Val Ser Tyr Leu Trp Thr Arg Asp Glu Thr Ser Pro Ala Ala  
675 680 685

Gly Glu Val Leu Asn His Ser Asp His His Pro Val Leu Phe Leu Ser  
690 695 700

Asn Leu Val Glu Gly Thr Tyr Thr Phe His Leu Lys Val Thr Asp Ala  
705 710 715

Lys Gly Glu Ser Asp Thr Asp Arg Thr Thr Val Glu Val Lys Pro Asp  
720 725 730 735

Pro Arg Lys Ser Asn Leu Val Glu Ile Ile Leu Asp Val Asn Val Ser  
740 745 750

Gln Leu Thr Glu Arg Leu Lys Gly Met Leu Ile Arg Gln Ile Gly Val  
755 760 765

Leu Leu Gly Val Leu Asp Ser Asp Ile Ile Val Gln Lys Ile Gln Pro  
770 775 780

Tyr Thr Glu Gln Ser Thr Lys Met Leu Phe Phe Val Gln Asn Asp Pro  
785 790 795

Pro His Gln Leu Phe Lys Gly His Glu Val Ala Ala Met Leu Lys Ser  
800 805 810 815

Glu Leu Gln Lys Gln Lys Ala Asp Phe Leu Ile Phe Arg Ala Leu Glu  
820 825 830

Ile Ser Thr Val Thr Cys Gln Leu Asn Cys Ser Asp His Gly His Cys  
835 840 845

Asp Ser Phe Thr Lys Arg Cys Val Cys Asp Pro Phe Trp Met Glu Asn  
850 855 860

Phe Ile Lys Val Gln Leu Arg Asp Gly Asp Ser Asn Cys Glu Trp Ser  
865 870 875

Val Leu Tyr Val Ile Ile Ala Ser Phe Val Ile Val Val Ala Leu Gly  
880 885 890 895

Ile Leu Ser Trp Thr Thr Ile Cys Cys Cys Lys Arg Gln Lys Gly Lys  
900 905 910

Pro Lys Arg Lys Ser Arg Tyr Lys Ile Leu Asp Ala Thr Asp Gln Glu  
915 920 925

Ser Leu Glu Leu Lys Pro Thr Ser Arg Ala Gly Ser Lys Gln Lys Gly  
930 935 940

Pro Thr Leu Ser Ser Ser Leu Met His Ser Glu Ser Glu Leu Asp Ser  
945 950 955

Asp Asp Ala Ile Phe Thr Trp Pro Asp Arg Glu Lys Gly Lys Leu Leu  
960 965 970 975

Tyr Gly Gln Asn Gly Ser Val Pro Asn Gly Gln Thr Pro Leu Lys Ser  
980 985 990

Arg Ser Ala Arg Glu Glu Ile Leu  
995

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<211> 691
<212> DNA
<213> Mus musculus

<220>
<221> misc_feature
<222> (633)..(633)
<223> 'n' stands for unidentified base.

<220>
<221> misc_feature
<222> (680)..(680)
<223> 'n' stands for unidentified base.

<220>
<221> misc_feature
<222> (682)..(682)
<223> 'n' stands for unidentified base.

<400> 23
ccggcgtccg gcagatgcac gcggggcgaa ggccggggga gaggcgaaaa gagagaaccc      60
acaacaaaac ttggctcgct gcgcccacgg ctcgacttga atgacaggag ccggcgccccg      120
cgagacgcag cggacaccccg cgagcctgtt ccgcccacgg cgccgcgc agccgcagg      180
gctggcaagg gccagtggca tcagatcccc cagagctggg gttacaggtg gttgtgagtc      240
atcccagaga gtgctggct cagtcttctg tgagcagagc actgctctta acagataagc      300
tttgtggactt ttatggagac aagccaaagg tgagagaaga aagccagcct gtccagcacc      360
atggctggca gcaggggcct gccactccta ctgctggtgc ttcagctctt cctggccct      420
gtgctgcctg tgagggcacc tgtgtttggc cgaagtgaca ccccccacccct gagcccccag      480
gagaatgaat ttgtggagga agagaatcag ccagtgctgg ttctgagctc cgaggagcca      540
gagcctggcc agccactgtc gactgtcccg agattggtgc ctgttccagg aaggtgtatg      600
gactgtggtg gcattgacct gcgtgagttt cangggaaact gccgagcaca ccaaccatct      660
tctcttgcag aaaaaccagn tngagaaaaat c                                         691

<210> 24
<211> 572
<212> DNA
<213> Mus musculus

<400> 24
gctgctgtca ggtggccct tttatggtgg gttcctgtgg tcgctgcgc gcggctggcc      60
gacttccgca gcgggtctcg ggccaccgag cgccgtcttc acccagcgcc atggctgtgg      120

```

|            |            |            |            |             |            |     |
|------------|------------|------------|------------|-------------|------------|-----|
| ccgctgtcgg | ccgcccgaga | gccctgcgt  | gcccgtgtt  | gctcctgctg  | tcactcctgc | 180 |
| tggtagccgg | ccctgcgtg  | ggctggaacg | accctgacag | aatactcttg  | cgggatgtga | 240 |
| aagctttac  | cctctactcc | gaccgctaca | ccaccccg   | gaggctggac  | cctatccac  | 300 |
| agttgaagtg | tgttggaggc | accgcccgtt | gtgaggccta | taccccccagg | gtgatacagt | 360 |
| gccagaacaa | aggctggat  | ggctacgatg | tacagtggga | atgtaagacc  | gacttggata | 420 |
| ttgcatacaa | atttggcaaa | actgtggtga | gctgtgaagg | ctacgagtcc  | tctgaagacc | 480 |
| agtatgtcct | caggggttcc | tgccgcttgg | agtacaactt | agattacaca  | gagctggcc  | 540 |
| tgaagaaact | gaaggagcgc | ggccgcgtcg | ac         |             |            | 572 |

<210> 25  
 <211> 877  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> misc\_feature  
 <222> (662)..(662)  
 <223> 'n' stands for unidentified base.

|          |            |            |             |            |            |            |     |
|----------|------------|------------|-------------|------------|------------|------------|-----|
| <400> 25 | ctccggcga  | gttctcggtg | ggtcgccccgg | cagccctccc | gccatgcacc | tgctgcttgc | 60  |
|          | agccgcgttc | gggctgctgc | tgctgctgcc  | gccgccccgg | gccgtagcct | cccgaaagcc | 120 |
|          | gacgatgtgc | cagagatgcc | ggacgctggt  | ggacaagttc | aaccagggga | tggccaacac | 180 |
|          | ggccaggaag | aatttcggtg | gcccccaacac | ggcgtgggaa | gagaagacgc | tgtctaagta | 240 |
|          | cgaattcagt | gagatccggc | ttctggagat  | catgggggt  | ctgtgtgaca | gcagtgcatt | 300 |
|          | tgagtgcaac | caactcttgg | agcagcagga  | ggagcagcta | gaggcttgg  | ggcagacact | 360 |
|          | gaagaaggag | caccccaacc | tatttgagtg  | gttctgtgta | cacacactga | aagcgtgctg | 420 |
|          | tcttccaggc | acctacgggc | cagactgtca  | agagtgccag | ggtgggtccg | agaggccttg | 480 |
|          | cagcggaaac | ggctattgca | gcggagacgg  | cagcagacag | ggcgacgggt | cctgccagt  | 540 |
|          | tcacacaggc | tacaaggac  | cactgtgtat  | tgactgcaca | gacggcttct | tcagcttgc  | 600 |
|          | gaggaacgag | acccacagca | tctgctcagc  | ctgtgatgag | tcttgcaaga | cctgctctgg | 660 |
|          | tncaagcaac | aaagactgta | tccagtgtga  | agtgggctgg | gcacgtgtgg | aggatgcctg | 720 |
|          | tgtggatgtg | gatgagtgtg | cagcagagac  | atctccgtgc | agcgatggcc | agtactgtga | 780 |
|          | gaatgtcaac | ggctcgta   | catgtgaaga  | ctgtgattct | acctgcgtgg | gctgtacagg | 840 |

aaaaggccca gccaactgta aggagtgtat tgccggc 877

<210> 26  
<211> 930  
<212> DNA  
<213> Mus musculus

<400> 26  
aggggaccgc cgccacgagc gagagctcg cagccccgcc acgatgcccc cgcccagg 60  
acgcctcctc cagccgctgg ccgggctgcc ggccctggcc acgctcctgc tgctgctcg 120  
ggcgccaaa ggcccggg cccaggaggt ggaagcggac agcggggtcg agcaggaccc 180  
gcacgccaag cacctgtata cggccgacat gttcacgcac gggatccaga gcgcgcgca 240  
cttcgtcatg ttcttcgcgc cctgggtgtgg acactgccag cggctgcagc caacttggaa 300  
tgacctggga gacaagtaca acagcatgga ggatgccaag gtctacgtgg ccaaagtgg 360  
ctgcacggct gattccgacg tttgtctgc ccagggagtg cgaggatacc ccaccctgaa 420  
gttttttaag cctggacaag aagcagtgaa gtaccagggt cctagagact ttgaaacact 480  
ggaaaaactgg atgctgcaga cactgaacga ggagccagcc acacccggagc cggaagcgg 540  
accacccaga gcccctgagc tcaaacadggg gtttatgag ctctcgccca acaactttga 600  
gctgcatgtt tctcaaggca accactttat caagttttc gctccgtggt gcggtcactg 660  
caaagctctg gctccaacct gggagcagct ggctctggc cttgaacatt ctgaaaccgt 720  
caagattggc aaggttgact gcacgcagca ctacgctgtc tgctcagagc atcaggtcag 780  
aggctatcca actctgctct ggttcgaga tggcaagaag gtggatcagt acaagggaaa 840  
gcgggacttg gagtcactga gagactatgt gcagtcccag ctgcagggtt cagaggcagc 900  
tccggagact gttgagccgt cagaggcccc 930

<210> 27  
<211> 641  
<212> DNA  
<213> Mus musculus

<220>  
<221> misc\_feature  
<222> (325)..(325)  
<223> 'n' stands for unidentified base.

<220>  
<221> misc\_feature  
<222> (329)..(329)

<223> 'n' stands for unidentified base.

<400> 27  
aggggcggga ccgggcgggt tgcggagggt aggcacgcgg aggccgggcc atgcgtgcgg 60  
gccggtgtgc cgccgcgctg ctgctgctgc tactgagcgg cgccgggcgc gcgatcggt 120  
ccgaggacat cgtggtaggc tgccgggtt tcgtgaagtc ggacgtggag atcaactact 180  
cgctcatcga gataaagtta tacaccaagc atggacttt gaaatatcag acggactgtg 240  
ctcctaacaa cggctacttt atgatcccct tgtatgataa gggggatttc atcctgaaga 300  
tcgaacctcc tctggctgg agttntganc caaccaacgt gtagctgcga gtggatggtg 360  
tgagcgacat ctgcacgaag ggcgggaca tcaacttcct attcactggc ttctctgtga 420  
atggcaaggt cctcagcaaa gggcagcccc tggcccccagc aggagttcag gtatccctga 480  
gaagcaccgg tgctgactcg aagatccagt ctacagtcac gcagcctggc ggaaagttg 540  
cgttttcca agttttccct ggagattatg aaatccttgc aactcaccgg acctgggccc 600  
tgaaggaggc aagtaccacg gtgcgtgtga cgaactcgaa t 641

<210> 28  
<211> 703  
<212> DNA  
<213> Mus musculus

<400> 28  
gcgcgtcgcg gaccccccgc tgggcctcca gtggcacagc ctccctgggg gctttggcag 60  
gtgtcacttc ttcacccctgg cgtcataggt gcctgcgtt ttgttaggcac tcacgtagcc 120  
actgtcgtcc aggatgtcct gccgtccagc gatgccctt cccttgcgc tctcatcaaa 180  
gcgttcttg tggagccccg tatacttact ggtgtccgtc agccggtcca cagcaccacc 240  
cgtttagct ttggtgacgc caatgttggc cggttccttg cccgctatca gctggcagat 300  
ggcatcaaag gcctcctccct tggacttccc cttgaaccgc ttagttgcca gctctccag 360  
ggccttcttg aactcctcat agttgattac tctagcagat ttgcgccttga ctttggagaa 420  
gacgatgtcg acgtcggtgc cggttacggc cttccgtcg gccacccctac agtccttgc 480  
cagcttggcc cagttcttgc cattcatctc ttgcccgtg gccttgggtt cgccatggat 540  
ggcaaacttc cggaaagctct cctccagccc agctatgtcc gtgctcgctg ccatgccacc 600  
cggttctac cggttggctg ctccctgagcg tgccttcgga caggacccag gaactgatgc 660  
tggagaccag gaggctccac agctccgctc cctgcccggct ccc 703

<210> 29  
 <211> 934  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> misc\_feature  
 <222> (605)..(605)  
 <223> 'n' stands for unidentified base.

|  |     |  |
|--|-----|--|
| <400> 29   |     |  |
| ccgagggttca agaggagcct agggagtggc agctctcgct gaccggcggg tcccagagac | 60  |  |
| ctgcccccaa ggtgtcccac tgtgtggcta agggtgggat agaaccgggg ctgggagagc  | 120 |  |
| cgggttatgg gttccagtgg tggttccgcc gcttccttgc ttgcctctgt cttacctcgg  | 180 |  |
| cgttcagcct attttcctc gtaagaattt gacactttc cgtgcccctt ccataccgca    | 240 |  |
| ggtgtgttc gtagaggctc tcacgcttt caaaaggcgt ctcatctaag acttgctaga    | 300 |  |
| accaacctga ctaaaggagt caccgtcata ccccccattgc acctggagta aatctgactg | 360 |  |
| tccgaaggac gaaggaccgg tctgtgagca cttgtgctaa ggtggacttt attcacactc  | 420 |  |
| ctgagtggaa tattatttgt cactcactcc tgagtccctgc cggttggagg ggctgccttt | 480 |  |
| ggaaatgagt tctggaaact gaacacagga actgggtgcc tgtaccaggc ttgccatttg  | 540 |  |
| cctgaccgag ttactcttct ttggatcccg gcgctgcagt acctttgaat tgttcctgtg  | 600 |  |
| aaggncagaa gtaggtattt ggtcccttgg agctgtgagc tgatgttaggt gctggaaact | 660 |  |
| cagctgtggt gtgctgcaag accaaggacg agtcttgcag tggtaagtgt tttcctcagg  | 720 |  |
| gtgctcagac ggtgaaaatc agagatcagg ccaccttct gtgagccttc agctgagtct   | 780 |  |
| aaaggtgtta ttgatcagaa tggcttcagg atggtttac ctgtcctgca tggtgctggg   | 840 |  |
| atcgctggga tcgatgtgca tcctttcac tgcctactgg atgcagtact ggcgcgggtgg  | 900 |  |
| ctttgcctgg gatggcacgg tgctcatgtt taac                              | 934 |  |

<210> 30  
 <211> 812  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> misc\_feature  
 <222> (589)..(589)  
 <223> 'n' stands for unidentified base.

|  |     |
|--|-----|
| <400> 30   |     |
| ggaggctgag gcaagagggg gctgtccggg tggggagcca gcacttcctt cttcctcctc  | 60  |
| tgcgtgaggg gagagaaggt tgggggtccc cgagcccatg gatcgggagg aggccggaggc | 120 |
| cggcagagc cggcacccct ctatgtggcc ctgagccccg tgtactggtt ccgcctctct   | 180 |
| ggaaggccat ggagaagaga ctgggagtca agccaagtcc cgttcctgg gtttgccag    | 240 |
| gatattgttgcagacatca gtgaagctgc cgagaagcct gtacctgctt tacagtttct    | 300 |
| tctgcttcag cgttctgtgg ttgtcaacag atgctgatga gagcagatgc caacagggga  | 360 |
| agacacttta tggagctggc ttgagaactg agggagaaaa tcacccctccgg cttcttcag | 420 |
| gaagcctgcc tttccacgccc tgtcgggctg cctgctgccc ggactctgcc tgccacgctc | 480 |
| tatggtggct ggaagggatg tgcttcagg ctgactgcag taagccccag agctgccagc   | 540 |
| cttttaggac agactcttcc aattccatgc tgatcatttt tcaaaaatnc caaactacag  | 600 |
| atgatttggg cttctgcct gaagatgatg aaccacatct tctgaggcta ggctggggca   | 660 |
| ggacatcggt gaggaggcag agccttcttg gggctccctt caccctttct gtaccctcta  | 720 |
| gtcaccacca gagcttactc agggatcggc agaagagaga tctcagtgtg gtacctacac  | 780 |
| atggagcgat gcagcattct aaagtgaatc ac                                | 812 |

<210> 31  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Oligonucleotide designed to act as primer for amplifying cDNA fragment of secretory or membrane proteins derived from mouse white adipose tissue.

<400> 31  
 ggggtggac catcctcta 19

<210> 32  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Oligonucleotide designed to act as primer for amplifying cDNA fragment of secretory or membrane proteins derived from mouse white adipose tissue.

<400> 32  
 cgcgagctg taaacggtag 20

<210> 33  
<211> 21  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Oligonucleotide designed to act as 5'-RACE gene-specific primer f or identifying base sequence encoding full length mSST20-14.  
  
<400> 33  
caggcccctg ctgccagcca t

21

<210> 34  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Oligonucleotide designed to act as 3'-RACE gene-specific primer f or identifying base sequence encoding full length mSST20-14.  
  
<400> 34  
atgcacgcgg ggcgaaaaaa

20

<210> 35  
<211> 21  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Oligonucleotide designed to act as 5'-RACE gene-specific primer f or identifying base sequence encoding full length mSST22-22.  
  
<400> 35  
gcgaccacag gaacccacca t

21

<210> 36  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Oligonucleotide designed to act as 3'-RACE gene-specific primer f or identifying base sequence encoding full length mSST22-22.  
  
<400> 36  
atggtgtttt cctgtggtcg

20

<210> 37  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 5'-RACE gene-specific primer f or identifying base sequence encoding full length mSST8-5.

<400> 37  
ggctgcaaggc agcaggtgca t 21

<210> 38  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 3'-RACE gene-specific primer f or identifying base sequence encoding full length mSST8-5.

<400> 38  
atgcacacctgc tgcttgcagc 20

<210> 39  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 5'-RACE gene-specific primer f or identifying base sequence encoding full length mSST19-15.

<400> 39  
gcgtccctggg cgcgaaaaa t 21

<210> 40  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 3'-RACE gene-specific primer f or identifying base sequence encoding full length mSST19-15.

<400> 40  
atgccccccgc gcccaggacg 20

<210> 41  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 5'-RACE gene-specific primer f or identifying base sequence encoding full length mSST13-11.

<400> 41  
ggcacaccgg cccgcacgca t 21

<210> 42  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 3'-RACE gene-specific primer f or identifying base sequence encoding full length mSST13-11.

<400> 42  
atgcgtgcgg gccggtgtgc 20

<210> 43  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 5'-RACE gene-specific primer f or identifying base sequence encoding full length mSST9-8.

<400> 43  
tatgtccgtg ctgcgtgcc t 21

<210> 44  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 3'-RACE gene-specific primer f or identifying base sequence encoding full length mSST9-8.

<400> 44  
atgtcctgcc gtccagcgt 20

<210> 45  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 5'-RACE gene-specific primer f or identifying base sequence encoding full length mSST21-3.

<400> 45  
gtaaaaccat cctgaaggca t 21

<210> 46

<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 3'-RACE gene-specific primer f or identifying base sequence encoding full length mSST21-3.

<400> 46  
atgggttcca gtggtggttc 20

<210> 47  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 5'-RACE gene-specific primer f or identifying base sequence encoding full length mSST20-6.

<400> 47  
gactcccagt ctcttctcca t 21

<210> 48  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Oligonucleotide designed to act as 3'-RACE gene-specific primer f or identifying base sequence encoding full length mSST20-6.

<400> 48  
atggatcggg aggaggcgga 20